United States Department of Agriculture

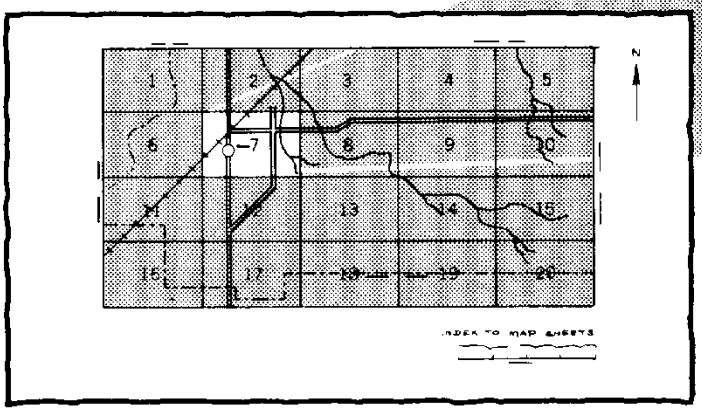
Soil Conservation Service

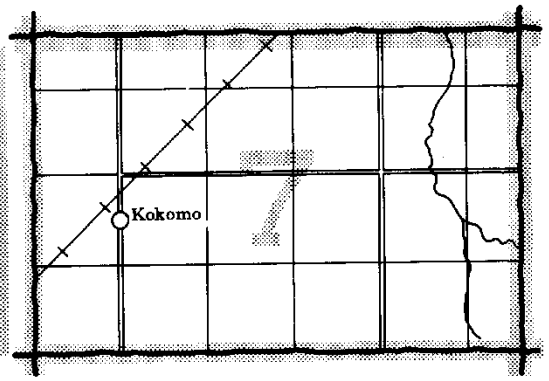
In cooperation with Mississippi Agricultural and Forestry Experiment Station

Soil Survey of Rankin County, Mississippi

HOW TO USE

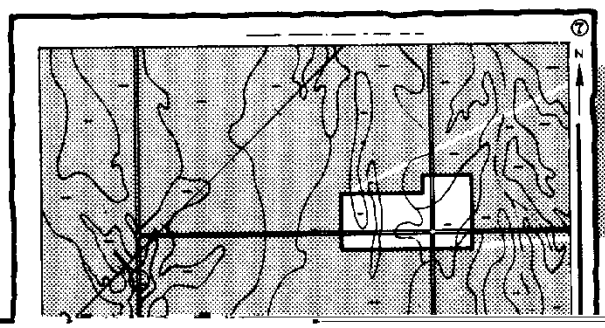
1. Locate your area of interest on the "Index to Map Sheets".

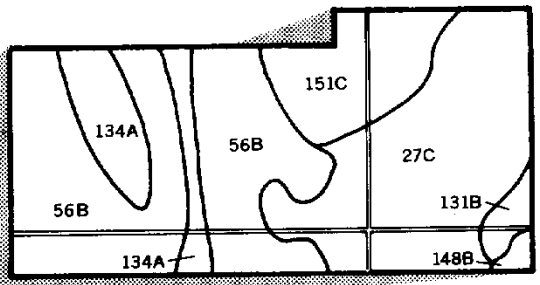




2. Note the number of the map sheet and turn to that sheet.

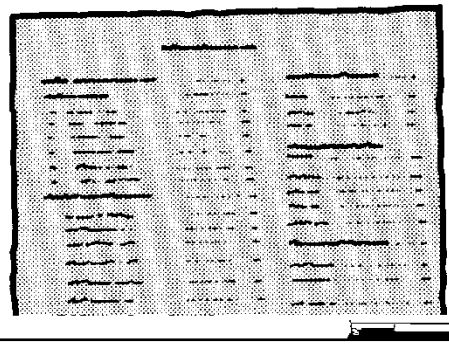
3. Locate your area of interest on the map sheet.





THIS SOIL SURVEY

5. Turn to "Index to Soil Map Units" which lists the name of each map unit and the page where that map unit is described.



This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other federal agencies, state agencies including the Agricultural Experiment Stations, and local agencies. The Soil Conservation Service has leadership for the federal part of the National Cooperative Soil Survey. In line with Department of Agriculture policies, benefits of this program are available to all, regardless of race, color, national origin, sex, religion, marital status, or age.

Major fieldwork for this soil survey was completed in 1984. Soil names and descriptions were approved in 1984. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1984. This soil survey was made cooperatively by the Soil Conservation Service and the Mississippi Agricultural and Forestry Experiment Station. It is part of the technical

Contents

Soil Series

Issued September 1987

Tables

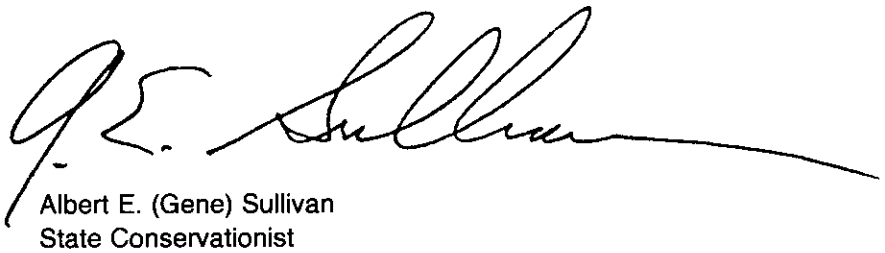
Foreword

This soil survey contains information that can be used in land-planning programs in Rankin County. It contains predictions of soil behavior for selected land uses. The survey also highlights limitations and hazards inherent in the soil, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

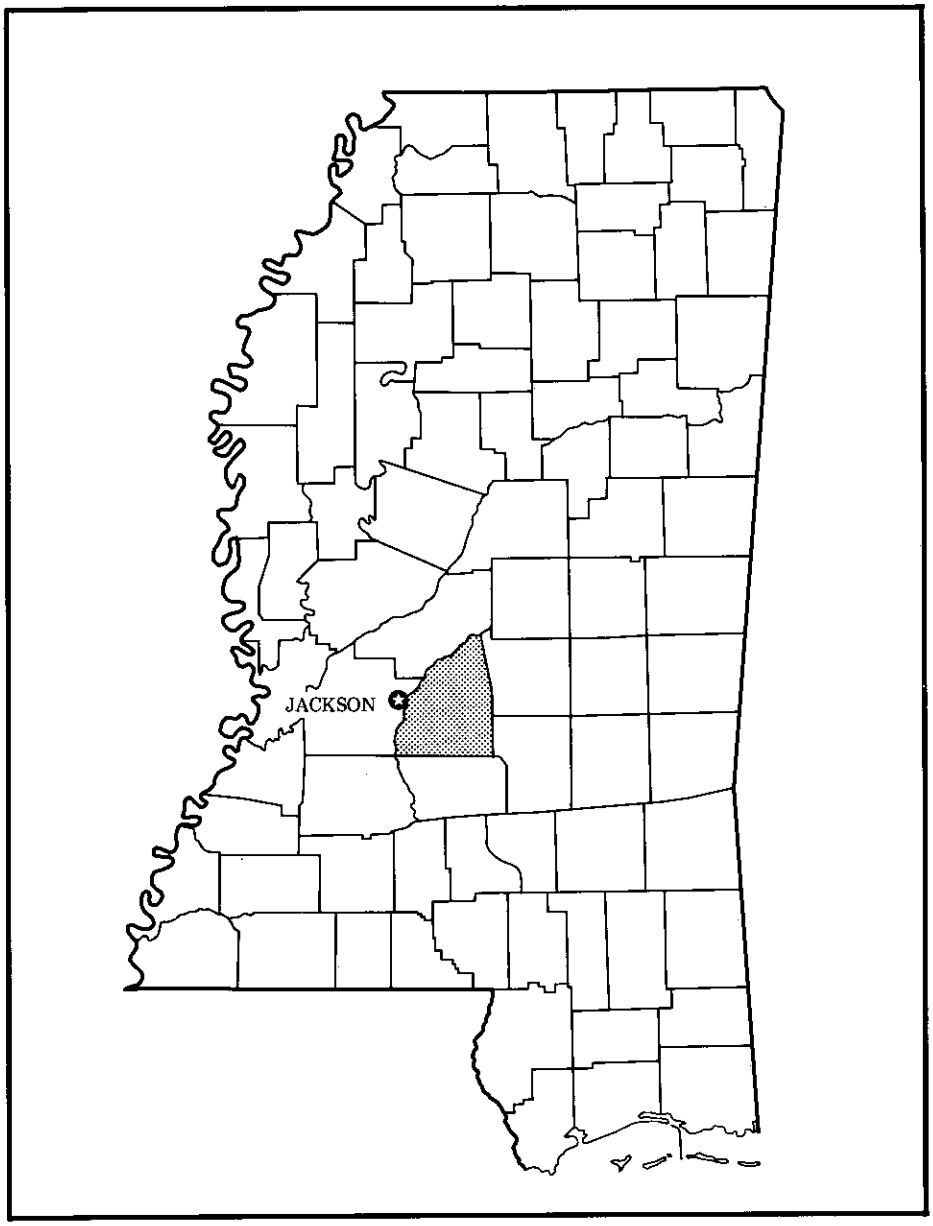
This soil survey is designed for many different users. Farmers, ranchers, foresters, and agronomists can use it to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the survey to plan land use, select sites for construction, and identify special practices needed to insure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the survey to help them understand, protect, and enhance the environment.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are shallow to bedrock. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. Broad areas of soils are shown on the general soil map. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described. Information on specific uses is given for each soil. Help in using this publication and additional information are available at the local office of the Soil Conservation Service or the Cooperative Extension Service.



Albert E. (Gene) Sullivan
State Conservationist
Soil Conservation Service



Location of Rankin County in Mississippi.

pi

ional Climatic Data Center, Asheville, North

Mississippi, has long, hot summers
pical air from the Gulf of Mexico
s the area. Winters are cool and fairly
are cold wave that moderates in 1 or 2
is fairly heavy throughout the year,
oughts are rare. Summer precipitation,
hunderstorms, is adequate for crops.
ata on temperature and precipitation
a as recorded at Pelahatchie in the
81. Table 2 shows probable dates of
fall and the last freeze in spring. Table
n length of the growing season.
erage temperature is 50.3 degrees F,
daily minimum temperature is 37.7
est temperature on record, which
atchie on January 12, 1962, is -3
ier the average temperature is 79
average daily maximum temperature is
highest recorded temperature, which
16, 1980, at Pelahatchie, is 104

e days are shown in table 1. They are
at units." During the month, growing
mulate by the amount that the average
day exceeds a base temperature (50
normal monthly accumulation is used to
r successive plantings of a crop
freeze in spring and the first freeze in

w the U.S. highways in an east-west and
direction. Jackson Municipal Airport is in
ınd is serviced by three major airlines.
proximity to Jackson, the state capitol,
center of a busy transportation system.

y and Geology

geologist, Mississippi Bureau of Geology, Jackson,
this section.

in the Gulf Coastal Plain physiographic
:h America. The state has been further
12 physiographic units. In Rankin County,
nits are represented. The northern two-
ınty is characterized by the Jackson
ed by gently rolling terrain, its southern
ncides with the geologic contact between
ation and the Forrest Hill Formation.
ckson Prairie Belt is the Vicksburg Hills,
gently rolling hills. The southern section
ty is characterized by the Piney Woods
nit and is underlain by the Catahoula
some of the higher elevations are
loess terrace deposits and some
sits *(3)*.
sed in Rankin County is of Eocene,
Miocene series of the Tertiary System *(4)*
tocene and Recent series of the
tem.
it exposed in the county is the Yazoo
e Jackson Group. The Yazoo clay is a
brillonite that exhibits high shrink-swell
e removal or addition of water. This
the Yazoo clay causes foundation
types of structures and roadbeds
utcrop. The major economic value of this
lightweight aggregate, but it can also be
r clays to make brick and ceramic

st sediments exposed are of the Forrest
On the surface, the Forrest Hill sediments
d, silty, micaceous, gray, fine to very fine
Clays are generally gray, buff, pink, and
ite beds can also be observed in some
ed wood is often scattered over the
Forrest Hill outcrops. A few domestic
completed in the Forrest Hill Formation.
ngs marl is a gray-green, fine to coarse
rous to very fossiliferous, glauconitic
times clayey in part and often limy.
rmation are mostly *Pectins* and oysters.
ndstone, limonitic and manganiferous
ncretions are the end product of the
Spring marl.
limestone are characterized by
s of limestone and marl. The thickness of
eds ranges from 4 feet to less than 1/2

est-northeast direction. Both rivers are
leeks and their tributaries. The major
River watershed are Fannegusha
kin County, Pelahatchie Creek in the
Richland Creek in west-central
Steen Creek in the southwestern
eeks feeding the Strong River are the
Brushy, and Purvis Creeks.

unty was inhabited mainly by the
orn was the major agricultural crop.
and melons were the minor crops.
uropean settlers came changing
and before long, cotton was the major
,500 bales of cotton were produced in
,000 bales in 1899. Cotton production
ie 20th century. About 4,500 bales
924, 6,300 bales in 1969, 11,300
9,200 bales in 1981. In recent years,
products have replaced cotton as the
1974, cotton produced a total income
s while poultry and poultry products
21.4 million dollars for Rankin County

900's, the number of farms in Rankin
d while the size of the farms has
ere 4,151 farms in 1910, 2,207 farms
88 farms in 1974. The size of the
1910 to 1925 was 85 acres; and in
sed to about 203 acres. In 1910,
f the county was in farms, but by
ent remained in farmland.
,000 dairy cattle were in Rankin
ie number had declined to 1,700 and
lined to only 998. During this same
of beef cattle changed little, and in
at about 23,000 head.
nkin County decreased from 359,900
10,000 acres in 1977.

urvey Was Made

made to provide information about the
area. The information includes a
soils and their location and a
uitability, limitations, and management
cified uses. Soil scientists observed
gth, and shape of slopes; the general
; the kinds of crops and native plants
ls; and the kinds of bedrock. They dug
y the soil profile, which is the
al layers, or horizons, in a soil. The
n the surface down into the
terial from which the soil formed. The

data on crop yields under defined levels of management were assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can state with a fairly high degree of probability that a given soil will have a high water table within certain depths in most years, but they cannot assure that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Map Unit Composition

A map unit delineation on a soil map represents an area dominated by one major kind of soil or an area dominated by several kinds of soil. A map unit is identified and named according to the taxonomic classification of the dominant soil or soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural objects. In common with other natural objects, they have a characteristic variability in their properties. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of soils of other taxonomic classes. Consequently, every map unit is made up of the soil or soils for which it is named and some soils that belong to other taxonomic classes. In the detailed soil map units, these latter soils are called inclusions or included soils. In the general soil map units, they are called soils of minor extent.

Most inclusions have properties and behavioral patterns similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting (similar) inclusions. They may or may not be mentioned in the map unit descriptions. Other inclusions, however, have properties and behavior divergent enough to affect use or require different management. These are contrasting (dissimilar) inclusions. They generally occupy small areas and cannot be shown separately on the soil maps because of the scale used in mapping. The inclusions of contrasting soils are mentioned in the map unit descriptions. A few inclusions may not have been observed, and consequently are not mentioned in the descriptions, especially where the soil pattern was so

complex that it was impractical to make enough observations to identify all of the kinds of soils on the landscape.

The presence of inclusions in a map unit in no way diminishes the usefulness or accuracy of the soil data. The objective of soil mapping is not to delineate pure taxonomic classes of soils but rather to separate the landscape into segments that have similar use and management requirements. The delineation of such landscape segments on the map provides sufficient information for the development of resource plans, but onsite investigation is needed to plan for intensive uses in small areas.

Units

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Woodland
Urban uses

include residential, commercial, and industrial developments. Wildlife habitat includes openland, woodland, and wetland wildlife habitat.

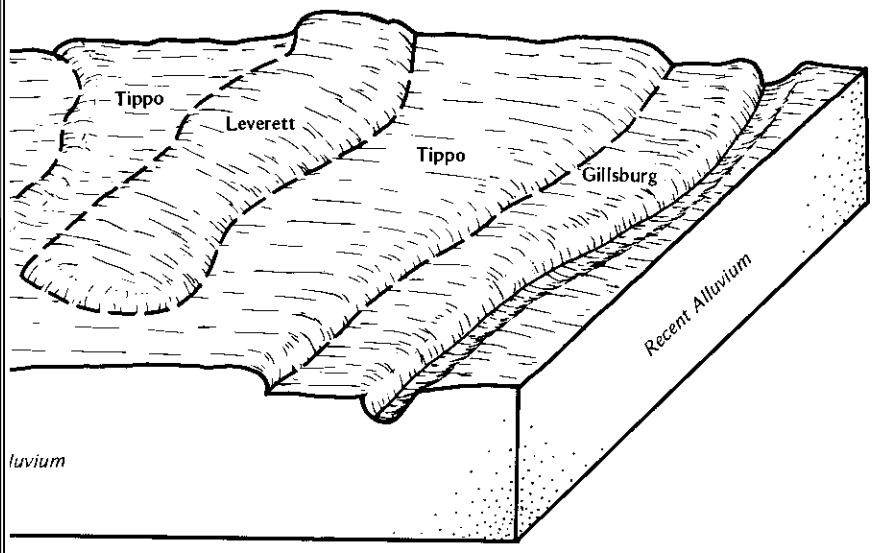
Dominantly nearly level soils that are well drained to poorly drained; on low stream terraces and flood plains

In this group are five general soil map units. The major soils are the well drained to poorly drained, silty Arkabutla, Cascilla, Gillsburg, Guyton, Leverett, Oaklimeter, Tippo, and Urbo soils; and the moderately well drained, loamy Kirkville and Quitman soils. The slopes range from 0 to 2 percent. These map units make up about 21.7 percent of the county.

1. Tippo-Leverett-Guyton

Nearly level, somewhat poorly drained, well drained, and poorly drained, silty soils; on low stream terraces and flood plains

This map unit consists of two broad areas in the west-central part of Rankin County. These soils are on low



luvium

of soils and landscape in the Tippo-Leverett-Guyton map unit.

his map unit is in the western and northern parts of ıkin County. These soils mainly are on the flood ns of the Pearl River and its tributaries. The nearly ar surface of the flood plain is broken at irregular rvals by old river runs, natural levees, sloughs, tes, and scarps (fig. 2). The slope ranges from 0 to 2 cent.

his map unit makes up about 3.7 percent of the nty. It is about 40 percent Cascilla soils, 32 percent abutla soils, and 28 percent soils of minor extent.

ascilla soils are well drained. They are near the low rps and on the slightly higher elevations on natural es on flood plains along the Pearl River and the or tributaries. These soils formed in silty alluvium.

abutla soils are somewhat poorly drained. They are in ad, level areas, in slight depressions, and in the main d basins of the flood plain. These soils formed in silty vium.

he minor soils in this map unit are the Gillsburg and limeter soils. These soils are silty and on the flood ns. Gillsburg soils are somewhat poorly drained. limeter soils are moderately well drained.

lost of the acreage in this map unit is in woodland. ecause of wetness and flooding, Cascilla and abutla soils are poorly suited to row crops and small ns. They are moderately suited to pasture grasses legumes.

he soils in this map unit are well suited to use as odland. Productivity is high for bottom land dwoods. The use of equipment is limited because of ness and flooding. Seedling mortality and plant npetition are moderate limitations on these soils.

he soils in this map unit have severe limitations for an use because of flooding.

ascilla and Arkabutla soils have fair potential for elopment of habitat for openland wildlife and good ential for development of habitat for woodland llife. For development of habitat for wetland wildlife, scilla soils have very poor potential and Arkabutla s have fair potential.

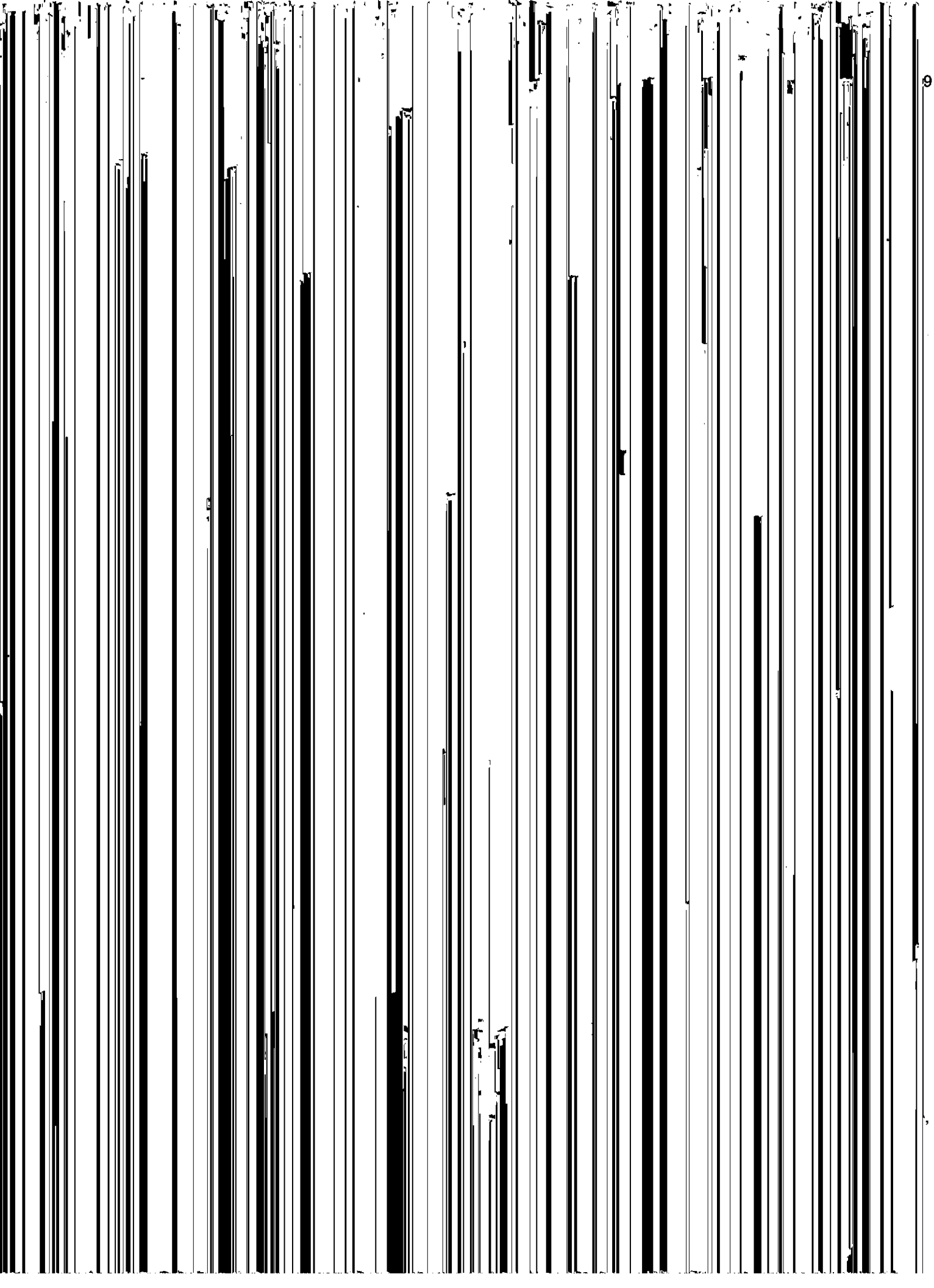
Urbo-Arkabutla

arly level, somewhat poorly drained, silty soils; on d plains

his map unit is in the northern and north-central parts Rankin County. These soils are along Pelahatchie and inegusha Creeks and their tributaries. Areas of these s are subject to occasional or frequent flooding ierally during winter or early in the spring. The slopes ge from 0 to 2 percent.

his map unit makes up about 3.5 percent of the inty. It is about 48 percent Urbo soils, 28 percent abutla soils, and 24 percent soils of minor extent.

Irbo soils are on broad flats and in depressions of od plains. These soils formed in clayey alluvium.



ately well drained and are on
s are poorly drained and are on
ces, and flood plains. The Tippo
rly drained and are on broad
nd flood plains.
his map unit is used as
are used for pasture or crops.
: that are occasionally flooded
ted crops and small grains and
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poorly suited to row crops and

urg soils are well suited to use as
ttom land hardwoods. Flooding
re the main concerns in
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ooding.
urg soils have fair potential for
itat for openland wildlife and
evelopment of habitat for
evelopment of habitat for wetland
have poor potential and
potential.

well drained, loamy soils; on low od plains

e central and southeastern part of
oils mostly are on terraces and
trong River and its major
lle soils are subject to flooding
early in the spring. Flooding is
on. The slope ranges from 0 to 5

up about 6 percent of the county.
Quitman soils, 34 percent Kirkville
oils of minor extent.
low terraces or second bottoms
. These soils formed in loamy
are on flood plains near stream
ormed in loamy alluvium.
s map unit are Guyton, Tippo,
nah soils. Guyton and Tippo soils
am terraces, and flood plains.
drained, and Tippo soils are
ed. Oaklimeter soils are
d and are on flood plains.
derately well drained and are on

unit are used mainly for
voodland. The other soils are in
e well suited to most commonly
grains and to pasture grasses

Quitman and Kirkville soils are well suited to use as woodland. Flooding and wetness are moderate limitations to use of equipment. Plant competition is a moderate limitation.

The Quitman soils in this map unit are moderately suited to urban use because of wetness. The Kirkville soils are poorly suited to urban use because of flooding.

Quitman and Kirkville soils have good potential for the development of habitat for openland and woodland wildlife and poor potential for the development of habitat for wetland wildlife.

Dominantly nearly level to steep soils that are well drained to somewhat poorly drained; on uplands and stream terraces

In this group are five general soil map units. The major soils are the somewhat poorly drained to moderately well drained, silty Falkner, Kipling, Providence, and Tippah soils; and the moderately well drained to well drained, loamy Quitman, Savannah, and Smithdale soils. The slopes range from 0 to 40 percent. These map units make up about 78.3 percent of the county.

6. Kipling-Falkner-Savannah

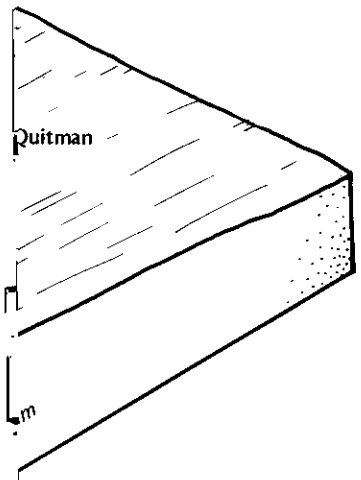
Nearly level to sloping soils; some are somewhat poorly drained, silty soils that are underlain by a plastic, clayey subsoil; and some are moderately well drained, loamy soils that have a fragipan; on uplands and stream terraces

This map unit is on the prairie in the northern part of Rankin County. The landscape has low relief and is mainly nearly level to gently rolling. In some places, the low hills have a cap of loamy terrace sediments (fig. 4). The slope ranges from 0 to 8 percent.

This map unit makes up about 23.6 percent of the county. It is about 40 percent Kipling soils, 18 percent Falkner soils, 16 percent Savannah soils, and 26 percent soils of minor extent.

Kipling soils are silty and are somewhat poorly drained. They are on uplands. These soils formed in clayey material. Falkner soils are silty and are somewhat poorly drained. They are on uplands and stream terraces. These soils formed in a silty mantle and the underlying acid, clayey deposits. Savannah soils are loamy and moderately well drained and have a fragipan. They are in slightly higher positions on the uplands and stream terraces than Kipling and Falkner soils. These soils formed in loamy material.

The minor soils in this map unit are Pelahatchie, Providence, Quitman, and Urbo soils. Pelahatchie soils are moderately well drained and are on uplands. Providence and Quitman soils are moderately well drained and are on uplands and stream terraces. Urbo soils are somewhat poorly drained and are on the flood plains.



e map unit.

unit have good potential for the
or openland and woodland
t of habitat for wetland wildlife,
oils have very poor potential. In
ipling soils have fair potential for
fe; in the gently sloping areas,
; and in the sloping areas, they

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soils; some are well drained,
re moderately well drained, silty
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dscape is hilly and is marked by
e generally less than one-eighth
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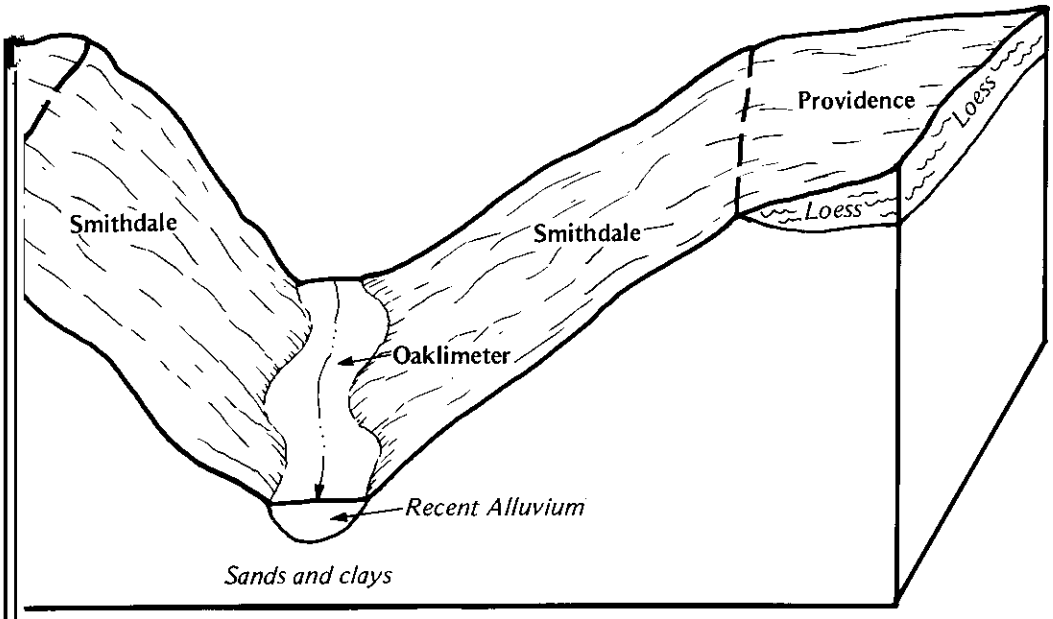

·The relationship of soils and landscape in the Kipling-Falkner-Savannah map unit.

arrow flood plains (fig. 5).
40 percent.
out 19.3 percent of the
Smithdale soils, 30 percent
cent soils of minor extent.
and are well drained. They
n uplands. These soils
vidence soils are silty and
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ces. These soils formed in a
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unit are Kisatchie,
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ah soils are moderately well
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ined and are on the flood
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orly suited to row crops and
rasses and legumes
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ed to row crops, and in the
rately suited to this use. In
g areas, Providence soils
d legumes for hay and

pasture, and in the sloping areas, they are moderately suited to this use.

Providence soils are moderately suited to use as woodland. Concerns in woodland management are few. Smithdale soils are moderately suited to woodland use. Steepness of slope is a moderate limitation to use of equipment on Smithdale soils if slopes are more than 15 percent.

Smithdale soils have severe limitations for urban use because of steepness of slopes. Providence soils have moderate limitations for urban use mainly because of seasonal wetness and steepness of slopes.

Smithdale and Providence soils have good potential for the development of habitat for openland and woodland wildlife, but on Smithdale soils if slopes are more than 15 percent, potential is fair. For the development of habitat for wetland wildlife, the potential of the soils in this map unit is very poor.

8. Providence-Tippah

Gently sloping to moderately steep, moderately well drained, silty soils; some have a fragipan; and some are underlain by plastic, clayey material; on uplands and stream terraces

This map unit is in the west-central and southwestern part of Rankin County. The landscape has moderate relief and is generally rolling but is moderately steep along the major drainageways. It is marked by broad ridgetops, by hillsides that are dissected by short

tion on Providence

re moderate
or urban use. On
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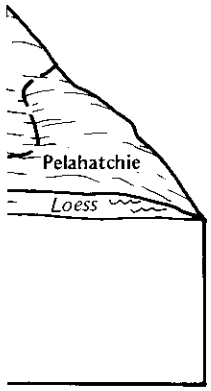

Kirkville, Ora, and
tely well drained
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About 61 percent, or 310,000 acres, of the county is used as woodland. Soils in all map units are well suited to or moderately suited to trees. Some soils have a moderate to severe limitation for equipment use, but this limitation can be overcome by harvesting during the drier periods.

About 6 percent, or 33,176 acres, of the county is classified as urban or built-up land. Soils in map units 2, 3, 4, and 5 that are on flood plains have severe limitations for urban use because of flooding. Quitman soils in map unit 5 are on higher elevations and are not subject to flooding. Soils in map unit 1 that are in protected areas have moderate limitations for urban use. Soils in map units 7 and 9 that are in hilly areas have severe limitations for urban use, mainly, because of the steepness of slope.

Soils in map units 8 and 10 have moderate limitations for urban use. High shrink-swell potential, low strength as it affects local roads and streets, and wetness are the main limitations of these soils for urban use. Most of the limitations can be overcome by special design and proper installation. The restricted permeability of Providence, Tippah, and Savannah soils is a limitation to use as septic tank absorption fields. This limitation can be partly overcome by enlarging septic tank absorption fields.

Kipling and Falkner soils in map unit 6 have severe limitations for urban use because of wetness and the high shrink-swell potential of the subsoil. Savannah soils have moderate limitations for urban use, mainly, because of wetness.

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Cascilla-Arkabutla association, frequently flooded, is an example.

Most map units include small scattered areas of soils other than those for which the map unit is named. Some of these included soils have properties that differ substantially from those of the major soil or soils. Such differences could significantly affect use and management of the soils in the map unit. The included soils are identified in each map unit description.

This survey includes *miscellaneous areas.* Such areas have little or no soil material and support little or no vegetation. Urban land is an example. Miscellaneous areas are shown on the soil maps. Some that are too small to be shown are identified by a special symbol on the soil maps.

Table 4 gives the acreage and proportionate extent of each map unit. Other tables (see "Summary of Tables") give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils.

2—Cascilla-Arkabutla association, frequently flooded. This map unit consists of deep, well drained and somewhat poorly drained, nearly level soils on the broad flood plain of the Pearl River. These soils formed in silty alluvium. In this flood plain area are abandoned channels and associated natural levees, oxbow lakes, low ridges, and intervening flats and depressions. Cascilla soil is well drained and mainly is on old natural levees and slight ridges. Arkabutla soil is somewhat poorly drained and mainly is on the broad flats and in small depressions. Individual areas of each soil are large enough to be mapped separately, but because of similar present or predicted uses, they were mapped as an association. The mapped areas range from 160 to 1,600 acres. The slopes are 0 to 2 percent.

Cascilla soil and soils that are similar make up about 43 percent of the map unit, and Arkabutla soil and soils that are similar make up 34 percent. The included soils make up 23 percent of the map unit.

The typical sequence, depth, and composition of the layers of Cascilla soil are as follows:

Surface layer:

0 to 2 inches; very dark grayish brown silt loam

Subsurface layer:

wn silt loam

loam
wn silt loam

vish brown fine sandy

lla soil:

strongly acid
ere the surface layer

a depth of 6 feet

long periods late in

ated by plant roots

illed throughout a
; tends to crust and

l composition of the
ws:

n brown silt loam
bam that has grayish

ownish gray, yellowish
rown silt loam
gray silt loam that

gray silty clay loam

butla soil:

Soil reaction: Very strongly acid or strongly acid throughout except in areas where the surface layer has been limed

Surface runoff: Slow

Erosion hazard: Slight

Seasonal water table: Fluctuates between a depth of 1 foot and 1.5 feet during prolonged wet periods

Flooding: Frequent for brief to very long periods late in winter and early in the spring

Root zone: Deep, but a water table commonly at a depth of 1 foot to 1.5 feet in winter and in the spring limits plant growth

Shrink-swell potential: Low

Tilth: Surface layer—friable, easily tilled throughout a wide range of moisture content, tends to crust and pack after heavy rains

Included with these soils in mapping are small areas of Gillsburg, Tippo, Oaklimeter, Cahaba, and Leverett soils. Gillsburg and Oaklimeter soils are on the flood plains, Tippo soils are on stream terraces and flood plains, and Cahaba and Leverett soils are on stream terraces. Also included are some sandy and loamy soils on flood plains, in and along sloughs, and in abandoned channels. The included soils make up about 23 percent of the map unit.

Most areas of Cascilla and Arkabutla soils are used as woodland.

These soils are poorly suited to row crops and small grains because of frequent flooding and wetness. They are moderately suited to grasses and legumes for hay and pasture. Wetness limits the choice of plants and restricts grazing. Proper stocking, controlled grazing, and weed and brush control help keep the soil and pasture in good condition.

Cascilla and Arkabutla soils are well suited to loblolly pine, sweetgum, eastern cottonwood, cherrybark oak, water oak, and Nuttall oak. In addition, Cascilla soil is well suited to yellow-poplar, and Arkabutla soil is well suited to green ash. Wetness and flooding are moderate limitations to use of equipment on Cascilla soil, and they are severe limitations for equipment use on Arkabutla soil. Seedling mortality and plant competition are moderate on Cascilla and Arkabutla soils. Wetness and flooding limitations can be alleviated by harvesting during the drier periods. If pines are planted on these soils, site preparation is needed to control competition from undesirable plants. Benefits of site preparation do not extend beyond one growing season. Natural regeneration of hardwood trees occurs without difficulty in all openings of one-half acre or more. Logging roads

s to streams to prevent
nels from forming in

vere limitations for urban

in capability subclass
suitability group 14W,
d suitability group 12W.

casionally flooded. This
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from 10 to more than
2 percent.
and composition of the
follows:

sh brown silt loam

k yellowish brown,
own silt loam
ark yellowish brown, light
ht brownish gray silt loam
llowish brown, light
own silt loam
nish gray silt loam that
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ght brownish gray, dark
own silt loam

)aklimeter soil:

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for brief periods following
arly in the spring

al water table commonly
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; plant growth

Tilth: Surface layer—friable; easily tilled throughout a wide range of moisture content; tends to pack and crust after heavy rains

Included with this soil in mapping are small areas of Gillsburg, Kirkville, and Tippo soils. Gillsburg soils are in similar positions on the landscape as Oaklimeter soils but are somewhat poorly drained. Kirkville soils are in similar positions and are also moderately well drained. Tippo soils are on stream terraces and flood plains, but they are somewhat poorly drained. Also, a few areas of Oaklimeter soils that are frequently flooded are included and some small areas of soils that are mildly alkaline in some horizons.

Most of the acreage of this Oaklimeter soil is used for row crops or pasture. A small acreage is used as woodland.

This soil is well suited to row crops and small grains, (fig. 6). Seasonal wetness is the main limitation. Proper arrangement of rows and surface field ditches remove excess surface water from low-lying areas. Returning crop residue to the soil improves tilth. Conservation tillage is beneficial. In the spring, seedbed preparation and the cultivation of the soil are sometimes delayed because of wetness and flooding. In wet years, flooding during the growing season can damage the crops.

This soil is well suited to grasses and legumes for hay and pasture. Overgrazing or grazing when the soil is too wet causes surface compaction and poor tilth and reduces the rate of moisture infiltration. Proper stocking, pasture rotation, weed and brush control, and restricted use during wet periods help keep the pasture and soil in good condition.

This soil is well suited to loblolly pine, sweetgum, eastern cottonwood, cherrybark oak, Nuttall oak, willow oak, and green ash. Equipment use and plant competition are moderate concerns in woodland management. Seasonal wetness and flooding are moderate limitations for the use of equipment, but they can be alleviated by harvesting during the drier periods. If pines are planted on this soil, site preparation is needed to control competition from undesirable plants. Benefits of site preparation do not extend beyond one growing season. Natural regeneration of hardwood trees occurs without difficulty in all openings of one-half acre or more. Logging roads should be located at right angles to streams to prevent new stream channels from forming in vehicle tracks.

Flooding and wetness are severe limitations for urban use.

This Oaklimeter soil is in capability subclass IIw and in woodland suitability group 10W.

5—Gillsburg silt loam, occasionally flooded. This is a deep, somewhat poorly drained, nearly level soil on the flood plains. It formed in silty alluvium. Individual areas

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depth of 1 foot and 1.5 feet in
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mapping are small areas of
eter, and Tippo soils.
aklimeter soils are on flood
stream terraces and flood
ome soils that are mildly
ne subsoil. These soils are on

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row crops and small grains.
ain limitation. Proper
surface field ditches remove
urning crop residue to the soil
n tillage is beneficial. In the
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cause of wetness and
in summer, crops in some
to moderate damage from

grasses and legumes for
ing or grazing when the soil is
mpaction and poor tilth and
re infiltration. Proper stocking,
brush control, and restricted
p keep the pasture and soil in

loblolly pine, cherrybark oak,
camore, water oak, eastern
d sweetgum. Concerns in
e slight, but equipment use,
nt competition are moderate
ss and flooding are limitations
arvesting during the drier
d, site preparation is required
undesirable plants. Benefits
last longer than one growing

season. Natural regeneration of hardwoods occurs without difficulty in all openings of one-half acre or more. If possible, logging roads should be located at right angles to streams to prevent new stream channels from forming in vehicle tracks.

Flooding and wetness are severe limitations for urban use.

This Gillsburg soil is in capability subclass IIw and in woodland suitability group 10W.

6—Oaklimeter-Gillsburg association, frequently flooded. This map unit consists of deep, moderately well drained and somewhat poorly drained, nearly level soils on the broad flood plains of Richland Creek and its major tributaries. These soils formed in silty alluvium. In places, the stream channels are shallow, and overbank flooding is frequent. The water from this flooded area flows into shallow sloughs, oxbow lakes, and abandoned channels. Uprooted trees, driftwood, and other debris and sediment deposits have partly clogged the natural drainage channels and have caused very slow runoff and the ponding of shallow water in low places. Oaklimeter soil is moderately well drained and mainly is on low relief ridges on the flood plain and on natural levees and other slightly raised areas between the stream channels and oxbow lakes. Gillsburg soil is somewhat poorly drained and is mainly in low positions on the flood plains. The soils in this map unit are in a regular and repeating pattern on the landscape. Individual areas are large enough to be mapped separately, but because of similar present or predicted uses, they were mapped as an association. The mapped areas range from 160 to more than 3,000 acres. The slopes range from 0 to 2 percent.

The Oaklimeter soil makes up about 53 percent of the map unit. The Gillsburg soil makes up about 29 percent. The included soils make up about 18 percent.

The typical sequence, depth, and composition of the layers of Oaklimeter soil are as follows:

Surface layer:
0 to 3 inches; brown silt loam

Subsoil:
3 to 14 inches; yellowish brown silt loam
14 to 22 inches; yellowish brown silt loam, pale brown and light brownish gray mottles
22 to 29 inches; brown silt loam mottled in gray and brown
29 to 60 inches; mottled gray and brown silt loam

Important soil properties of Oaklimeter soil:

Permeability: Moderate

Available water capacity: High

Soil reaction: Very strongly acid or strongly acid throughout

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crust and pack

are Cascilla,
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plains are Cascilla
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urg soils are used
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bark oak, loblolly
sweetgum, water
poplar (fig. 7). In
to Nuttall oak and
uited to American
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of Urbo soil:

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with this soil in mapping are small areas of and Gillsburg soils. These soils are on the s. Also included are a few small areas of soils levations that are flooded for a long duration er and early in the spring and areas of soils in d old channels that are under water except onged dry periods.

the acreage of this Urbo soil is used for row asture. A small acreage is used as woodland. is well suited to row crops and small grains. wetness is the main limitation. Proper nt of rows and surface field ditches remove face water. Returning crop residue to the soil ilth. Conservation tillage is beneficial. In the dbed preparation and cultivation of the soil mes delayed because of wetness and his soil is subject to flooding in winter and spring before crops are planted. After heavy he summer, crops are subject to moderate amage except in protected areas.

is well suited to grasses and legumes for d hay. Overgrazing or grazing when the soil is uses surface compaction and poor tilth and e rate of moisture infiltration. Proper stocking, tation, and restricted use during wet periods the pasture and soil in good condition.

is well suited to eastern cottonwood, American sycamore, yellow-poplar, oak, green ash, and loblolly pine. Concerns in management are slight, but equipment use competition are moderate concerns.

is a moderate hazard on this soil. Seasonal nd flooding are moderate limitations that can ed by harvesting during the drier periods. If planted, site preparation is required to control n from undesirable plants. Benefits of site n do not extend beyond one growing season. generation of hardwoods occurs without all openings of one-half acre or more. If ogging roads should be located at right angles to prevent new stream channels from forming tracks.

and wetness are severe limitations for urban

o soil is in capability subclass IIw and in suitability group 11W.

-Arkabutla association, frequently flooded. unit consists of deep, nearly level, somewhat ined soils on broad flood plains. The soils in nit are in a regular and repeating pattern on ape. Individual areas are large enough to be eparately, but because of similar present or predicted uses, they were mapped as an association. The mapped areas range from 1,200 acres to 10,000 acres. The slopes range from 0 to 2 percent. Urbo soil is on broad flats and in depressions. This soil formed in clayey alluvium. Arkabutla soil is on broad flats. It formed in silty alluvium.

Urbo soil and soils that are similar make up about 42 percent of the map unit. Arkabutla soils and soils that are similar make up about 34 percent. The included soils make up 24 percent.

The typical sequence, depth, and composition of the layers of Urbo soil are as follows:

Surface layer:
0 to 5 inches; dark grayish brown silty clay loam

Subsoil:
5 to 34 inches; grayish brown silty clay loam mottled in shades of brown
34 to 60 inches or more; gray silty clay mottled in shades of brown

Important soil properties of Urbo soil:

Permeability: Very slow

Available water capacity: High

Soil reaction: Very strongly acid or strongly acid

Surface runoff: Slow

Erosion hazard: Slight

Seasonal water table: At a depth of 1 foot to 1.5 feet during wet periods late in winter and early in the spring

Flooding: Frequent flooding for brief to long periods following heavy rains

Root zone: Deep, but a seasonal high water table commonly at a depth of 1 foot to 1.5 feet in winter and in spring limits plant growth

Shrink-swell potential: Moderate

Tilth: Good; surface layer—can be tilled throughout a fairly wide range of moisture content; surface compaction and crusting after heavy rains

The typical sequence, depth, and composition of the layers of Arkabutla soil are as follows:

Surface layer:
0 to 4 inches; dark brown silt loam

Subsoil:

4 to 14 inches; yellowish brown silt loam, grayish brown mottles
14 to 23 inches; grayish brown silt loam, yellowish brown mottles
23 to 31 inches; light brownish gray silt loam, yellowish brown mottles
31 to 55 inches; gray silt loam mottled in yellowish brown

Important soil properties of Arkabutla soil:

Permeability: Moderate

Available water capacity: High

Soil reaction: Very strongly acid or strongly acid

Surface runoff: Slow

Erosion hazard: Slight

Seasonal water table: Fluctuates between a depth of 1 foot and 2 feet of the surface in winter and early in the spring

Flooding: Frequent flooding for brief to long periods following heavy rains

Root zone: Deep, but the seasonal high water table limits plant growth

Shrink-swell potential: Low

Tilth: Surface layer—easily tilled throughout a wide range of moisture content; tends to crust and pack after heavy rains

Included with these soils in mapping are small areas of Cascilla, Gillsburg, Oaklimeter, Falkner, and Tippo soils. Cascilla soils are on old levees on the flood plains. Gillsburg and Oaklimeter soils are on the flood plains. Falkner and Tippo soils are on stream terraces.

Most areas of Urbo and Arkabutla soils are used as woodland.

The soils in this map unit are poorly suited to row crops and small grains because of frequent flooding and wetness. If these soils are used for crops, surface field ditches and proper arrangement of rows are needed to facilitate drainage. Conservation tillage is beneficial. Returning crop residue to the soil will improve tilth.

These soils are moderately suited to most grasses and legumes for hay and pasture. Wetness limits the choice of plants and restricts grazing. Overgrazing or grazing when the soil is too wet causes surface compaction and poor tilth and reduces the rate of moisture infiltration. Proper stocking, controlled grazing, and weed and brush control help keep the soil and pasture in good condition.

These soils are well suited to cherrybark oak, eastern cottonwood, green ash, sweetgum, water oak, American sycamore, and loblolly pine. In addition, Arkabutla soils are well suited to Nuttall oak and water oak, and Urbo soils are well suited to yellow-poplar. Concerns in woodland management on Urbo soils are moderate, but equipment use is a severe concern. The hazard of erosion is a slight concern. Windthrow and erosion are slight hazards on Arkabutla soil. The use of equipment is a severe limitation because of wetness and flooding. Wetness and flooding also causes a high rate of seedling mortality. If pines are planted, site preparation is required to control competition from less desirable plants. Benefits of site preparation do not extend beyond one growing season. Natural regeneration of hardwoods occurs without difficulty in all openings of one-half acre or more. Harvesting should be done during the drier periods. Logging roads should be placed at right angles to streams to prevent new watercourses from forming.

Flooding and wetness are severe limitations for urban use.

The soils in this map unit are in capability subclass IVw. Urbo soil is in woodland suitability group 11W, and Arkabutla soil is in woodland suitability group 12W.

12A—Cahaba fine sandy loam, 0 to 2 percent slopes. This deep, well drained, nearly level soil is on stream terraces. It formed in loamy and sandy alluvium. Individual areas range from 5 to 40 acres.

The typical sequence, depth, and composition of the layers of Cahaba soil are as follows:

Surface layer:
0 to 6 inches; dark yellowish brown fine sandy loam

Subsoil:
6 to 15 inches; yellowish red clay loam
15 to 41 inches; yellowish red loam

Substratum:
41 to 66 inches; yellowish brown loamy sand grading to light yellowish brown
66 to 75 inches or more; brown stratified loamy sand and sandy loam

This slightly eroded soil has a few rills. In a few areas, evidence of accelerated erosion is in the surface layer but not enough to greatly modify the thickness and the characteristics of the original plow layer.

Important soil properties of Cahaba soil:

Permeability: Moderate

Available water capacity: Moderate to high

Soil reaction: Very strongly acid to medium acid throughout except in areas where the surface layer has been limed

Surface runoff: Slow

ıt

: None within a depth of 6 feet

ısily penetrated by plant roots

l: Low

-friable; easily tilled throughout a
ıoisture content; tends to crust and
y rains

soil in mapping are small areas of
and Quitman soils. Savannah soils
and Leverett and Quitman soils are
Also included are a few small areas
to flooding.
ge of this Cahaba soil is used for
ire. The rest of the acreage is used

ıited to row crops and small grains.
and proper arrangement of rows are
ı crop residue to the soil helps

ıited to grasses and legumes for hay
stocking, controlled grazing, and
ıtrol help keep the soil and pasture in
tricted use during wet periods
npaction.
ıited to loblolly pine, yellow-poplar,
cerns in woodland management are
ıpetition is a moderate concern.
severe limitation for urban use.
s in capability class I and in
group 9A.

land complex, 0 to 2 percent
ex consists of deep, somewhat poorly
soils on low stream terraces and
oil formed in silty alluvium. Areas of
n land are so intermingled that it was
them separately. The mapped areas
0 acres.
ls that are similar make up about 40
unit. Urban land makes up about 35
ed soils make up about 25 percent.
nce, depth, and composition of the
are as follows:

lark grayish brown silt loam

pale brown silt loam, mottles of
ay

11 to 23 inches; silt loam mottled in shades of brown and gray
23 to 29 inches; grayish brown silt loam, slightly brittle
29 to 68 inches; silt loam mottled in shades of brown and gray
68 to 80 inches; yellowish brown silt loam mottled in shades of gray

Important soil properties of Tippo soil:

Permeability: Moderate

Available water capacity: Very high

Soil reaction: Very strongly acid to medium acid except in areas where the surface layer has been limed

Surface runoff: Slow

Erosion hazard: Slight

Seasonal water table: At a depth of 1.5 to 2.5 feet in the winter and early in the spring

Flooding: Protected by 'evees. Rare flooding in low places

Root zone: Deep, but a seasonal high water table at a depth of 1.5 to 2.5 feet during winter and early in spring limits plant growth

Shrink-swell potential: Low

Tilth: Good; surface layer—easily tilled throughout a wide range of moisture content; surface compaction and crusting after heavy rains

Included with these soils in mapping are small areas of Cahaba, Guyton, and Leverett soils. These soils are on stream terraces. Also included are a few areas of somewhat poorly drained and moderately well drained loamy soils on narrow flood plains.

Tippo soil is well suited to lawn grasses and ornamental plants. It is also well suited to native trees, such as loblolly pine, cherrybark oak, green ash, sweetgum, and yellow-poplar. This soil is well suited to vegetable plants.

Urban land consists of undisturbed soils and reworked soil material. Urban land is covered by houses, streets, light industry, commercial buildings, and parking lots (fig. 8).

Tippo soil is well suited to cherrybark oak, loblolly pine, green ash, sweetgum, and yellow-poplar.

Tippo soil has severe limitations for most urban uses and to use as septic tank absorption fields because of wetness and rare flooding. For local roads and streets, these limitations are moderate.

· Slight

· *table:* Perched water table at a depth of
ət late in winter and early in the spring

ıp, but a seasonal high water table at a
5 to 3 feet in winter and early in spring
growth

tential: Low

ıyer—friable; easily tilled throughout a
of moisture content; tends to crust and
heavy rains

this soil in mapping are small areas of
vidence, and Tippo soils. Oaklimeter soils
d plains. Providence soils are on adjacent
; and uplands. Tippo soils are on low
ś.
ıcreage of this Leverett soil is used for
ɔasture. The rest of the acreage is used

ell suited to row crops and small grains.
lage and returning crop residue to the
ɲ and reduce crusting and packing after
some places, proper arrangement of rows
d ditches are needed to remove surface

ell suited to grasses and legumes for hay
oper stocking, controlled grazing, and
ɲ control help keep the soil and pasture in
Restricted use during wet periods
ə compaction.
oderately suited to cherrybark oak,
ɔw-poplar, and loblolly pine. Concerns in
ıgement are slight.
ıave slight limitations for most urban uses.
ıoderate limitation to use for shallow
d dwellings with basements. Wetness is a
n for the use of this soil as septic tank
s.
soil is in capability class I and in
bility group 8A.

**silt loam, 0 to 2 percent slopes,
looded.** This is a deep, somewhat poorly
level soil on low stream terraces and
formed in silty alluvium.
equence, depth, and composition of the
soil are as follows:

es; brown silt loam
5 to 11 inches; yellowish brown silt loam, mottles in shades of brown and gray
11 to 17 inches; yellowish brown silt loam, mottles in shades of gray and yellow
17 to 22 inches; light brownish gray silt loam, mottles in shades of brown; slightly brittle
22 to 30 inches; brown silt loam, tongues of pale brown and light brownish gray silt
30 to 64 inches; silt loam mottled in shades of brown and gray

Important soil properties of Tippo soil:

Permeability: Moderate

Available water capacity: Very high

Soil reaction: Very strongly acid to medium acid throughout except in areas where the surface layer has been limed

Surface runoff: Slow

Erosion hazard: Slight

Seasonal water table: Perched water table at a depth of 1.5 to 2.5 feet during wet periods in winter and early in the spring

Flooding: Occasionally flooded for brief periods during winter and early in spring

Root zone: Deep, but a seasonal high water table at a depth of 1.5 to 2.5 feet during winter and early in spring limits plant growth

Shrink-swell potential: Low

Tilth: Surface layer—easily tilled throughout a wide range of moisture content; tends to crust and pack after heavy rains

Included with this soil in mapping are small areas of Gillsburg, Oaklimeter, Leverett, and Quitman soils. Gillsburg and Oaklimeter soils are on the flood plains. Leverett and Quitman soils are on stream terraces. Also included are a few small areas that are frequently flooded and some small areas that are rarely flooded.

Most of the acreage of this Tippo soil is used for row crops or pasture. A small acreage is used as woodland.

This soil is well suited to row crops and small grains. Seasonal wetness is the main limitation. Proper arrangement of rows and surface field ditches remove excess surface water. Returning crop residue to the soil improves tilth. Conservation tillage is beneficial. In the spring, seedbed preparation and cultivation of the soil are sometimes delayed because of wetness and flooding. This soil is subject to flooding in winter and

early in the spring before crops are planted. After heavy rainfall in the summer, crops are subject to moderate damage from flooding except in protected areas.

This soil is well suited to grasses and legumes for pasture or hay. Overgrazing or grazing when the soil is too wet causes surface compaction and poor tilth and reduces the rate of moisture infiltration. Proper stocking,

occurs without difficulty in all openings of one-half acre or more. If possible, logging roads should be placed at right angles to streams to prevent new stream channels from forming in vehicle tracks.

Flooding and wetness (fig. 9) are severe limitations for urban use.

This Tippo soil is in capability subclass IIw and in

1 to 12 inches; light brownish gray silt loam that has light yellowish brown mottles
12 to 21 inches; light brownish gray silt loam that has yellowish brown mottles

Subsoil:
21 to 65 inches; light brownish gray silt loam and silt clay loam, mottles in shades of brown

Important soil properties of Guyton soil:

Permeability: Slow

Available water capacity: High

Soil reaction: Extremely acid to strongly acid in the surface layer and upper part of the subsoil except in areas where the surface layer has been limed; strongly acid to neutral in the lower part of the subsoil

Surface runoff: Very slow

Erosion hazard: Slight

Seasonal water table: Near or at a depth of 1.5 feet late in winter and early in the spring

Flooding: Occasionally flooded for brief periods following heavy rains, especially late in winter and early in spring

Root zone: Deep, but a seasonal high water table at or near the surface in winter to the middle of spring limits plant growth

Shrink-swell potential: Low

Tilth: Good; surface layer—can be tilled throughout a fairly wide range of moisture content; surface compaction and crusting after heavy rains

Included with this soil in mapping are small areas of Leverett and Tippo soils. Leverett soils are on low stream terraces, and Tippo soils are on flood plains and stream terraces. Also included are small areas of soils in sloughs and drainageways in which water ponds much of the time.

Most of the acreage of this Guyton soil is used as woodland. Some areas are used for pasture and hay, and a small acreage is used for crops.

This soil is poorly suited to row crops and small grains because of wetness and flooding. These limitations can be alleviated by a major flood control system and a planned drainage system.

This soil is moderately suited to grasses and legumes for hay and pasture. Wetness limits the choice of plants. During periods of wetness, cutting or grazing should be deferred. Overgrazing or grazing when the soil is too wet causes surface compaction and poor tilth and reduces the rate of moisture infiltration. Proper stocking, controlled grazing, and weed and brush control help keep the soil and pasture in good condition. If the soil is used for crops, surface field ditches and proper arrangement of rows are needed to facilitate drainage. Conservation tillage is beneficial. Returning of crop residue to the soil will improve tilth.

This soil is well suited to loblolly pine, green ash, water oak, sweetgum, and southern red oak. The hazard of erosion is a slight concern in woodland management, the limitation to use of equipment is a severe concern, and seedling mortality is a moderate concern. Seasonal wetness and flooding are severe limitations that can be alleviated by harvesting during the drier periods. If pine trees are planted, site preparation is needed to control competition from undesirable plants. Benefits of site preparation do not extend beyond one growing season. Natural regeneration of hardwoods occurs without difficulty in openings of one-half acre or more.

Flooding and wetness are severe limitations for urban use.

This Guyton soil is in capability subclass IVw and in woodland suitability group 9W.

25A—Quitman loam, 0 to 2 percent slopes. This is a deep, moderately well drained, nearly level soil on uplands and stream terraces. Some areas of this soil are on terraces that border stream channels. Quitman soil formed in marine or fluvial loamy sediment. Individual areas range from 10 to 1,500 acres.

The typical sequence, depth, and composition of the layers of Quitman soil are as follows:

Surface layer:
0 to 5 inches; dark brown loam

Subsurface layer:
5 to 9 inches; yellowish brown loam that has pale brown mottles

Subsoil:
9 to 20 inches; yellowish brown loam that has light brownish gray mottles
20 to 44 inches; pale brown loam that has light brownish gray and strong brown mottles; slightly brittle
44 to 51 inches; strong brown loam that has light brownish gray, gray, and brownish yellow mottles; slightly brittle
51 to 65 inches or more; pale brown loam that has light brownish gray and strong brown mottles; slightly brittle

This slightly eroded soil has a few rills. In a few areas, evidence of accelerated erosion is in the surface layer

but not enough to greatly modify the thickness and characteristics of the original plow layer.

Important soil properties of Quitman soil:

Permeability: Moderate in the surface layer and upper part of the subsoil and moderately slow in the lower part

Available water capacity: Moderate

Soil reaction: Very strongly acid to strongly acid throughout except in areas where the surface layer has been limed

Surface runoff: Slow

Erosion hazard: Slight

Seasonal water table: Perched water table at a depth of 1.5 to 2 feet during wet periods

Flooding: None

Root zone: Deep, but a seasonal high water table limits plant growth

Shrink-swell potential: Low

Tilth: Surface layer—friable; easily tilled throughout a wide range of moisture content; tends to crust and pack after heavy rains

Included with this soil in mapping are small areas of Savannah and Tippo soils. Savannah soils are in slightly higher positions on the uplands and stream terraces than Quitman soil. Tippo soils are on broad flats and in heads of drainageways. Also included are small areas of soils that are subject to flooding and some somewhat poorly drained soils on stream terraces.

Most of the acreage of this Quitman soil is used for row crops and pasture. The rest of the acreage is used as woodland.

This soil is well suited to row crops and small grains. Conservation tillage and returning crop residue to the soil improve tilth and reduce crusting and packing after heavy rains. In some places, proper arrangement of rows and surface field ditches are needed to remove surface water.

This soil is well suited to grasses and legumes for hay and pasture. Overgrazing and grazing when the soil is too wet causes surface compaction and poor tilth and reduces the rate of moisture infiltration. Proper stocking, controlled grazing, and weed and brush control help keep the soil and pasture in good condition.

This soil is well suited to loblolly pine, water oak, American sycamore, yellow-poplar, and sweetgum. Concerns in woodland management are slight, but equipment use is a moderate concern. Seasonal wetness is a moderate concern in woodland management for harvesting the tree crop. This concern can be alleviated by harvesting during the dry periods.

Wetness is a moderate limitation for urban use. Wetness and low strength as it affects local roads and streets are moderate limitations. Wetness is a severe limitation for shallow excavations and dwellings with basements and for use of this soil as septic tank absorption fields.

This Quitman soil is in capability subclass IIw and in woodland suitability group 10W.

25B—Quitman loam, 2 to 5 percent slopes. This is a deep, moderately well drained, gently sloping soil on uplands and stream terraces. It formed in marine or fluvial loamy sediment. Individual areas range from 10 to more than 50 acres.

The typical sequence, depth, and composition of the layers of Quitman soil are as follows:

Surface layer:
0 to 5 inches; brown loam

Subsurface layer:
5 to 13 inches; yellowish brown loam, mottles in shades of yellow and gray

Subsoil:
13 to 24 inches; yellowish brown loam, mottles in shades of brownish yellow and light brownish gray
24 to 65 inches; mottled yellowish brown, brownish yellow, and light brownish gray clay loam; slightly brittle

This slightly eroded soil has a few rills. In a few areas, evidence of accelerated erosion is in the surface layer but not enough to greatly modify the thickness and characteristics of the original plow layer.

Important soil properties of Quitman soil:

Permeability: Moderate in the surface layer and upper part of the subsoil and moderately slow in the lower part of the subsoil

Available water capacity: Moderate

Soil reaction: Very strongly acid or strongly acid throughout except in areas where the surface layer has been limed

Surface runoff: Slow or medium

Erosion hazard: Moderate

Seasonal water table: Perched water table at a depth of 1.5 to 2 feet during wet periods

Flooding: None

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ippah soils. These soils are on
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anges from neutral to moderately

ge of this Tippah soil is used for row
small acreage is used as woodland.
uited to row crops and small grains. If
conservation practices, such as
uate cropping system, conservation
ing, contour stripcropping, grassed
ces (fig. 11) should be used to help
tivated crops that produce large
reduce crusting and packing and
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uited to grasses and legumes for hay
this soil for hay and pasture
erosion. The erosion hazard
ps are grown. Overgrazing or grazing
wet causes surface compaction and
es the rate of moisture infiltration.
controlled grazing help keep the
good condition.
ately suited to loblolly pine, yellow-
k, sweetgum, white oak, and
ncerns in woodland management are
npetition is a moderate concern. If
ite preparation is needed to control
ndesirable plants. Benefits of site
extend beyond one growing season.
well potential and wetness of this soil
ns for urban use. Low strength as it
and streets is a severe limitation.
rink-swell potential of the subsoil are
s for small commercial buildings.
proper installation can alleviate these
v permeability in the clayey lower part
evere limitation to use of this soil as
on fields, but this limitation can be
ing the absorption fields.
s in capability subclass IIIe and in
group 9A.

lt loam, 8 to 12 percent slopes,
eep, moderately well drained, strongly
des dissected by small drainageways
ormed in a mantle of silty material
clayey material. Individual areas
)0 acres.
ence, depth, and composition of the
il are as follows:

dark brown silt loam

strong brown silty clay loam

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41B2—Providence silt loam, 2 to 5 percent slopes, eroded. This is a deep, moderately well drained, gently sloping soil on ridgetops, uplands, and stream terraces. This soil has a fragipan. It formed in a silty mantle and the underlying loamy material. Individual areas range from 5 to more than 100 acres.

The typical sequence, depth, and composition of the layers of Providence soil are as follows:

Surface layer:
0 to 5 inches; dark brown silt loam

Subsoil:
5 to 17 inches; strong brown silt loam
17 to 26 inches; yellowish brown silt loam that has strong brown mottles
26 to 36 inches; brown silt loam that has light brownish gray and strong brown mottles; compact and brittle fragipan
36 to 63 inches or more; silt loam containing an appreciable amount of sand; mottles in shades of brown, gray, and yellow; compact and brittle fragipan

In most areas of this eroded soil, part of the original surface layer has been removed by erosion, and the remaining topsoil and subsoil have been mixed by tillage. In some small areas, the plow layer is the original topsoil; and in other areas, the plow layer is mainly the subsoil. In some areas are a few rills and shallow gullies.

Important soil properties of Providence soil:

Permeability: Moderate in the surface layer and upper part of the subsoil and moderately slow through the fragipan

Available water capacity: Moderate

Soil reaction: Very strongly acid to medium acid throughout except in areas where the surface layer has been limed

Surface runoff: Slow or medium

Erosion hazard: Moderate

Seasonal water table: Perched water table above the fragipan at a depth of 1.5 to 3 feet during wet periods

Flooding: None

Root zone: Compact and brittle fragipan in the lower part of the subsoil limits root penetration

Shrink-swell potential: Moderate

Tilth: Good; surface layer—can be tilled throughout a wide range of moisture content; tends to crust and pack after heavy rains

Included with this soil in mapping are small areas of Ora, Savannah, Tippah, and Leverett soils. Ora, Savannah, and Tippah soils are on uplands, and Leverett soils are on low stream terraces.

Most areas of this Providence soil are used as pasture and cropland. A small acreage is used as woodland.

This soil is well suited to row crops and small grains (fig. 13). Conservation practices, such as conservation tillage, crop rotation, contour farming, terraces, and grassed waterways should be used to slow runoff and help control erosion. Returning crop residue to the soil improves soil fertility and tilth and reduces crusting and packing.

This soil is well suited to grasses and legumes for pasture or hay. Using this soil for pasture and hay effectively slows runoff and controls erosion. The erosion hazard increases if row crops are grown. Overgrazing or grazing when the soil is too wet causes surface compaction and poor tilth and reduces the rate of moisture infiltration. Proper stocking, controlled grazing, and weed and brush control help keep the pasture and soil in good condition.

This soil is moderately suited to loblolly pine, yellow-poplar, sweetgum, Shumard oak, and shortleaf pine. Most concerns in woodland management are slight, but the windthrow hazard is a moderate concern. Seasonal wetness is a slight concern in woodland management for harvesting the tree crop, but this concern can be alleviated by harvesting during drier periods.

This soil has moderate limitations for most urban uses. Wetness and the shrink-swell potential of the subsoil are limitations for dwellings without basements and small commercial buildings. Low strength as it affects local roads and streets and seasonal wetness as it affects dwellings with basements are severe limitations. Special design and proper installation can alleviate these limitations. The moderately slow permeability in the fragipan and wetness are severe limitations to use of this soil as septic tank absorption fields, but these limitations can be alleviated by enlarging the absorption fields.

This Providence soil is in capability subclass IIe and in woodland suitability group 8D.

41C2—Providence silt loam, 5 to 8 percent slopes, eroded. This is a deep, moderately well drained, sloping soil on ridgetops and hillsides on uplands. This soil has a fragipan. It formed in a mantle of silty material and the underlying loamy material. Individual areas range from 5 to 80 acres.

The typical sequence, depth, and composition of the layers of Providence soil are as follows:

Surface layer:

is in capability subclass IIIe and in
oup 8D.

rban land complex, 2 to 8
complex consists of deep,
d, gently sloping to sloping soils
terraces. Providence soil has a
ed in a mantle of silty material and
aterial. The Urban land part of
owns of Richland, Pearl, Florence,
Providence soil and Urban land
t it was not practical to map them
d areas range from 40 to 300

es up about 40 percent of this
akes up about 35 percent. The
about 25 percent of the map unit.
e, depth, and composition of the
il are as follows:

grayish brown silt loam

lowish red silt loam
rong brown silt loam that has
ottles
lt loam mottled in shades of
in the upper part and sandy loam
es of brown and gray in the lower
nd brittle fragipan

ties of Providence soil:

in the surface layer and upper
and moderately slow in the

y: Moderate

ngly acid to medium acid
in areas where the surface layer

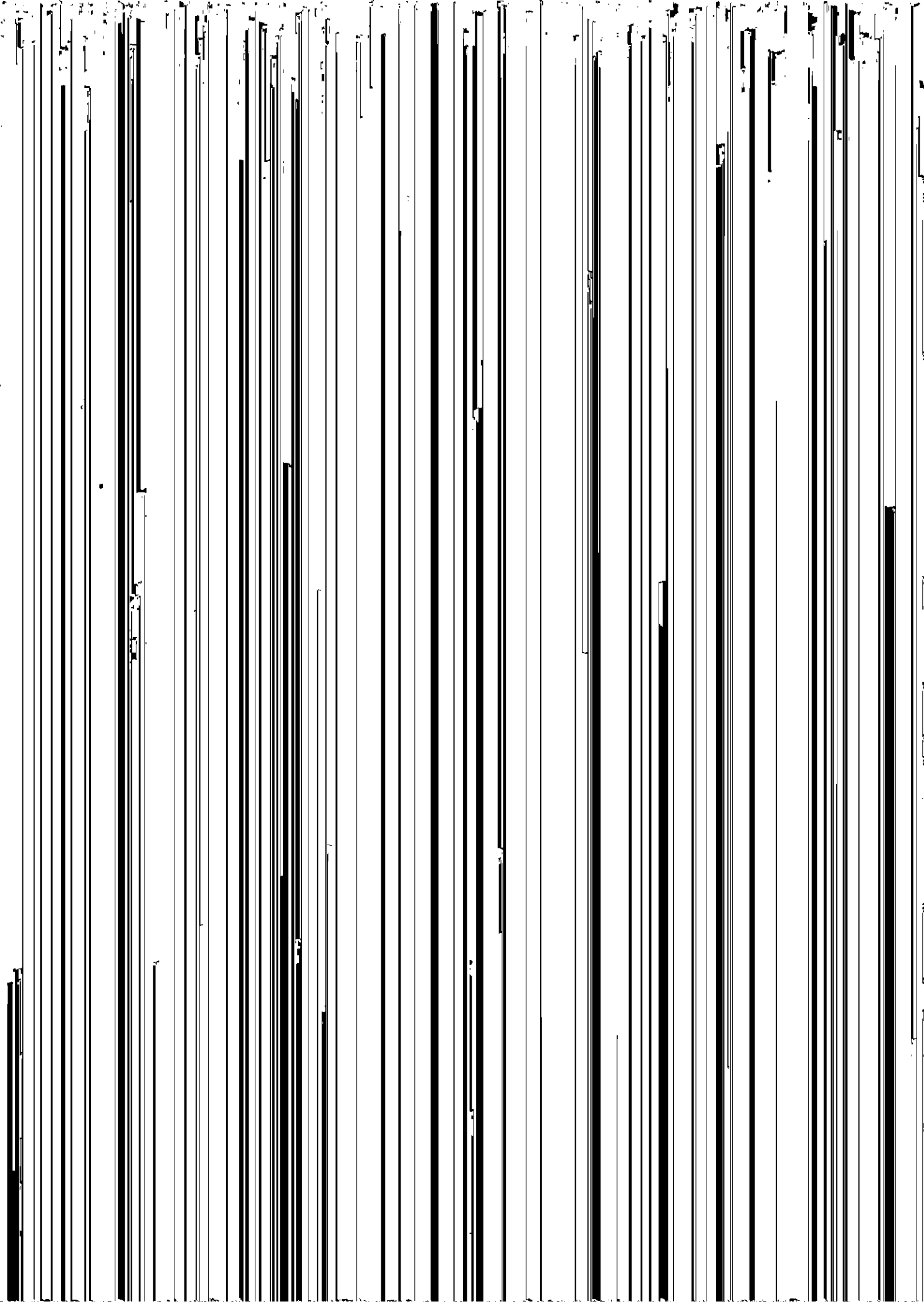
medium

ate to severe

Perched water table above the
between a depth of 1.5 and 3
riods

nd brittle fragipan in the lower part
s root penetration

Moderate



infiltration. Proper stocking, controlled grazing, ɪ and brush control help keep the pasture and od condition.
ɔil is moderately suited to loblolly pine, shortleaf l sweetgum. Concerns in woodland nent are slight, but plant competition is a ɜ concern. If pines are planted, site preparation ɪ to control competition from undesirable plants. of site preparation do not extend beyond one season.
ɔil has moderate limitations for most urban uses. ngth as it affects local roads and streets and wetness are the main limitations. For dwellings ɜments, wetness is a severe limitation. For small ɔial buildings, steepness of slope is a moderate . Special design and proper installation can these limitations. The moderately slow ility in the fragipan and wetness are severe s to use of this soils as septic tank absorption ɪt these limitations can be alleviated by enlarging rption fields.
ɪra soil is in capability subclass IIIe and in ɪ suitability group 8A.

–Ora fine sandy loam, 8 to 12 percent eroded. This is a deep, moderately well drained, sloping soil on hillsides on uplands. This soil has .n. It formed in loamy marine sediment. Individual ŋge from 10 to 40 acres.
pical sequence, depth, and composition of the Ora soil are as follows:

layer:
2 inches; dark grayish brown fine sandy loam

ɪce layer:
5 inches; grayish brown fine sandy loam

22 inches; red sandy clay loam
o 36 inches; yellowish red loam mottled in pale ɪrown
o 60 inches; yellowish red sandy loam mottled ɪith gray; compact and brittle fragipan

ɜt areas of this eroded soil, part of the original layer has been removed by erosion, and the ɪg topsoil and subsoil have been mixed by tillage. small areas, the plow layer is the original and in other areas, the plow layer is mainly the In some areas are a few rills and shallow gullies. tant soil properties of Ora soil:

ɔility: Moderate in the upper part of the subsoil moderately slow through the fragipan

ɜ water capacity: Moderate

Soil reaction: Very strongly acid or strongly acid throughout except in areas where the surface layer has been limed

Surface runoff: Rapid

Erosion hazard: Severe

Seasonal water table: Perched water table above the fragipan at a depth of 2 to 3.5 feet during wet periods

Flooding: None

Root zone: Compact and brittle fragipan in the lower part of the subsoil limits root penetration

Shrink-swell potential: Low

Tilth: Good; surface layer—can be worked throughout a wide range of moisture content; tends to crust and pack after heavy rains

Included with this soil in mapping are small areas of Maben, Smithdale, and Tippah soils. These soils are on the uplands.

Most of the acreage of this Ora soil is used as pasture and woodland. A small acreage is used as cropland.

This soil is poorly suited to row crops and small grains because of steepness of slope and rapid runoff and because the hazard of erosion is severe. If row crops are grown, intensive use of conservation practices, such as conservation tillage, contour farming, contour stripcropping, terraces, grassed waterways, vegetated filter strips, vegetated field borders, and cropping systems that include grasses and legumes are needed to slow runoff and help control erosion. Returning crop residue to the soil improves fertility and tilth and reduces crusting and packing of the surface layer.

This soil is moderately suited to grasses and legumes for pasture or hay. Overgrazing or grazing when the soil is too wet causes surface compaction and poor tilth and reduces the rate of moisture infiltration. Using this soil for hay and pasture effectively controls erosion. The hazard of erosion increases if row crops are grown. Proper stocking, controlled grazing, and weed and brush control help to keep the pasture and soil in good condition.

This soil is moderately suited to loblolly pine, shortleaf pine, and sweetgum. Concerns in woodland management are slight. If pines are planted, site preparation is needed to control competition from undesirable plants. Benefits of site preparation do not extend beyond one growning season.

This soil has moderate limitations for most urban uses. Low strength and slope as they affect local streets and roads and seasonal wetness are the major limitations. Steepness of slopes is a severe limitation for small

tration is limited. Compact and
he lower part of the subsoil limits

Low

yer—can be tilled throughout a
sture content; tends to crust and
ains

il in mapping are small areas of
dence soils. Ora and Tippah soils
ovidence soils are on uplands and

avannah soil are used as pasture
creage is used as woodland.
d to row crops and small grains.
rop rotation, contour farming,
waterways slow runoff and help
ing crop residue to the soil
ilth and reduces crusting and
layer.
d to grasses and legumes for
pasture plants effectively slow
erosion. Overgrazing or grazing
et causes surface compaction and
the rate of moisture infiltration.
olled grazing, and weed and brush
pasture and soil in good condition.
ely suited to loblolly pine, shortleaf
oak. Concerns in woodland
t, but plant competition is a
e windthrow hazard is a moderate
lanted, site preparation is needed
from undesirable plants. Benefits
not extend beyond one growing

ate limitations for most urban uses.
he major limitation. Wetness is a
wellings with basements. Special
tallation can alleviate the wetness
tely slow permeability in the
are severe limitations for use of
absorption fields, but these
viated by enlarging the absorption

s in capability subclass IIe and in
oup 8A.

oam, 5 to 8 percent slopes,
p, moderately well drained, sloping
illsides on uplands. This soil has a
oamy marine sediment. Individual
about 100 acres.

The typical sequence, depth, and composition of the layers of Savannah soil are as follows:

Surface layer:
0 to 4 inches; brown loam

Subsoil:
4 to 22 inches; strong brown loam, yellowish red stains along root channels in the lower part
22 to 60 inches or more; strong brown loam mottled in shades or red, gray, and brown; compact and brittle fragipan

In most areas of this eroded soil, part of the original surface layer has been removed by erosion, and the remaining topsoil and subsoil have been mixed by tillage. In some small areas, the plow layer is the original topsoil; and in other areas, the plow layer is mainly the subsoil. In some areas are a few rills and shallow gullies.

Important soil properties of Savannah soil:

Permeability: Moderate in the surface layer and upper part of the subsoil and moderately slow through the fragipan

Available water capacity: Moderate

Soil reaction: Very strongly acid or strongly acid throughout except in areas where the surface layer has been limed

Surface runoff: Medium

Erosion hazard: Moderate to severe

Seasonal water table: Perched water table above the fragipan at a depth of 1.5 to 3 feet during wet periods

Flooding: None

Root zone: Compact and brittle fragipan in the lower part of the subsoil limits root penetration

Shrink-swell potential: Low

Tilth: Good; surface layer—can be tilled throughout a wide range of moisture content; tends to crust and pack after heavy rains

Included in mapping are small areas of Ora, Providence, and Tippah soils. These soils are on uplands.

Most areas of this Savannah soil are used as pasture or cropland. A small acreage is used as woodland.

This soil is moderately suited to row crops and small grains. The erosion hazard and runoff increase if row crops are grown. Conservation tillage, contour farming, terraces, grassed waterways, and cropping systems that include grasses and legumes slow runoff and help control erosion. Returning crop residue to the soil improves fertility and tilth and reduces crusting and packing of the surface layer.

This soil is well suited to grasses and legumes for pasture or hay. These pasture plants effectively slow runoff and help control erosion. Overgrazing or grazing when the soil is too wet causes surface compaction, and poor tilth and reduces the rate of moisture infiltration. Proper stocking, controlled grazing, and weed and brush control help to keep the pasture and soil in good condition.

This soil is moderately suited to loblolly pine, shortleaf pine, and southern red oak. Most concerns in woodland management are slight, but the windthrow hazard and plant competition limitation are moderate concerns. If pines are planted, site preparation is needed to control competition from undesirable plants. Benefits of site preparation do not extend beyond one growing season.

This soil has moderate limitations for most urban uses. Seasonal wetness is the major limitation. Wetness is a severe limitation for dwellings with basements. Steepness of slope is a moderate limitation for small commercial buildings. Special design and proper installation can alleviate these limitations. The moderately slow permeability in the fragipan and wetness are severe limitations as septic tank absorption fields, but these limitations can be alleviated by enlarging the absorption fields.

This Savannah soil is in capability subclass IIIe and in woodland suitability group 8A.

50B—Savannah-Quitman association, undulating. This map unit consists of deep, moderately well drained, gently sloping to sloping soils on stream terraces and uplands. These soils formed in loamy marine or fluvial sediments. The soils in this map unit are in a regular and repeating pattern on the landscape. Individual areas are large enough to be mapped separately, but because of similar present or predicted uses, they were mapped as an association. The mapped areas range from 160 to more than 600 acres. The slopes range from 2 to 8 percent.

Savannah soil is mainly on slightly higher stream terraces and uplands that have slopes that range from 2 to 8 percent, and Quitman soil is mainly on lower stream terraces that have slopes that range from 2 to 5 percent.

The Savannah soil and soils that are similar make up about 48 percent of the map unit. Quitman soil and soils that are similar make up about 28 percent. The included soils make up about 24 percent of the map unit.

The typical sequence, depth, and composition of the layers of Savannah soil are as follows:

Surface layer:
0 to 4 inches; dark grayish brown fine sandy loam

layer:
nches; brown fine sandy loam

inches; yellowish brown loam
0 inches; loam in the upper part and clay
in the lower part, mottled in shades of gray,
and brown; compact and brittle fragipan

soil properties of Savannah soil:

: Moderate in the surface layer and upper
the subsoil and moderately slow through the
1

ater capacity: Moderate

: Very strongly acid or strongly acid
out except in areas where the surface layer
en limed

off: Slow or medium

ard: Moderate to severe

ater table: Perched water table above the
1 at a depth of 1.5 to 3 feet of the surface
wet periods

one

Compact and brittle fragipan in the lower part
subsoil limits root penetration

l potential: Low

surface layer—can be tilled throughout a
nge of moisture content; tends to crust and
ter heavy rains

al sequence, depth, and composition of the
uitman soil are as follows:

er:
nches; grayish brown loam

inches; yellowish brown loam that has pale
vn and light brownish gray mottles
8 inches; yellowish brown loam that has light
vnish gray and reddish yellow mottles; slightly
le
0 inches; mottled yellowish brown, strong
vn, and light brownish gray clay loam; slightly
le

t soil properties of Quitman soil:

Permeability: Moderate in the surface layer and upper part of the subsoil and moderately slow in the lower part

Available water capacity: Moderate

Soil reaction: Very strongly acid or strongly acid throughout except in areas where surface layers have been limed

Surface runoff: Slow to medium

Erosion hazard: Moderate

Seasonal water table: Perched water table at a depth of 1.5 to 2 feet during wet periods

Flooding: None

Root zone: Deep, but a seasonal water table at a depth of 1.5 to 2 feet during winter and early in the spring limits plant growth.

Shrink-swell potential: Low

Tilth: Surface layer—friable; easily tilled throughout a wide range of moisture content; tends to crust and pack after heavy rains

Included with these soils in mapping are Kirkville and Ora soils. Kirkville soils are on the flood plains, and Ora soils are on the uplands. Also included are some soils that are similar to Savannah soils but are clayey in the lower part of the subsoil, and some small areas of soils that have slopes of more than 8 percent.

All acreages of Savannah and Quitman soils are used as woodland.

Savannah soil is moderately suited to row crops and small grains. Quitman soil is well suited to row crops and small grains. The erosion hazard and runoff increase if row crops are grown. Conservation tillage, contour farming, terraces, grassed waterways, and cropping systems that include grasses and legumes slow runoff and help control erosion. The surface layer tends to crust and pack after heavy rains. Returning crop residue to the soil improves fertility and tilth and reduces crusting and packing of the surface layer.

These Savannah and Quitman soils are well suited to grasses and legumes for pasture or hay. These pasture plants effectively slow runoff and help control erosion. Overgrazing or grazing when the soil is too wet causes surface compaction and poor tilth and reduces the rate of moisture infiltration. Proper stocking, controlled grazing, and weed and brush control help keep the pasture and soil in good condition.

Savannah soil is moderately suited to loblolly pine, shortleaf pine, and southern red oak. Concerns in woodland management are slight but the windthrow

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ods late in winter and

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and early in the

tilled throughout a
t; tends to crust and

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avannah soils. Kipling
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are similar to Falkner
lay.
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is used as woodland.
row crops and small
own, practices to help
cropping systems that
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ripcropping, grassed
e used. Cultivated
of residue reduce
trol erosion.
s and legumes for hay
and pasture
osion hazard
Overgrazing or grazing
rface compaction and
moisture infiltration.
), and weed and brush
soil in good condition.
pine, sweetgum,
. Concerns in
r soil are slight, but to

d to loblolly pine, cherrybark oak,
k, white oak, and sweetgum.
management are moderate, but
and windthrow are slight
tness is a moderate concern for
). This concern can be alleviated
/ periods. If pines are planted,
ed to control competition from
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wing season.
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or urban use. Low strength as it
streets is a severe limitation for
and proper installation can
ns. The very slow permeability of
the subsoil and wetness are
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limitations can be alleviated by
n fields.
capability subclass IIIw and in
up 8C.

im, 2 to 5 percent slopes. This
oorly drained, gently sloping soil
es on uplands in the Blackland
/ey sediment. Individual areas
than 200 acres.
, depth, and composition of the
e as follows:

ish brown silt loam

e brown silt loam

ottled yellowish brown, red, and
ray silty clay
llowish brown silty clay that has
nd light brownish gray mottles
ght olive brown silty clay that has
ray mottles

ottled dark grayish brown, olive
e yellow silty clay

soil has a few rills. In a few areas,
d erosion is in the surface layer
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riginal plow layer.
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ne surface layer and upper part of
ry slow in the lower part

y: Very high

re the surface layer has been limed and
ɡly acid to moderately alkaline in the lower
subsoil and in the substratum

Medium

: Moderate to severe

r table: Perched water table at a depth of
et during wet periods in winter and early
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ep, but a seasonal water table in winter
in the spring limits plant growth

ɔtential: Very high

ayer—friable; easily tilled throughout a
ə of moisture content; tends to crust and
heavy rains

ɳ this soil in mapping are small areas of
Tippah soils. These soils are on the
ncluded are smaller areas of soils that are
ŋg soils but have slopes of more than 8
ncluded are small areas of soils that are
y are alkaline throughout.
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oodland. A small acreage is used for row

noderately suited to row crops and small
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vated crops are grown. If row crops are
es to control erosion, such as cropping
nclude grasses and legumes, cover crops,
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/ated crops that produce large amounts of
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ɜsture. Using this soil for hay and pasture
ɪtrols erosion (fig. 16). Overgrazing or
the soil is too wet causes surface
ŋd poor tilth and reduces the rate of
ation. Proper stocking, controlled grazing,
l brush control help keep the pasture and
ɔndition.
soil is well suited to cherrybark oak, water
oak, white oak, sweetgum, and loblolly
s in woodland management are moderate,
n and windthrow hazards are slight
ɜsonal wetness is a moderate concern in
ŋagement for harvesting the tree crop. This
ɔe alleviated by harvesting during the drier
es are planted, site preparation is needed

t use and plant competition are
ines are planted, site preparation
npetition from undesirable plants.
tion do not extend beyond one

shrink-swell potential of this soil
r urban use. Low strength as it
streets is a severe limitation for
and proper installation can
s. The very slow permeability of
the subsoil and wetness are
e of this soil as septic tank
limitations can be alleviated by
fields.
is in capability subclass IIw and
group 9C.

lt loam, 2 to 5 percent slopes.
tely well drained, gently sloping
Blackland Prairie. It formed in a
and the underlying calcareous,
ual areas range from 5 to more

, depth, and composition of the
oil are as follows:

brown silt loam

k brown silt loam that has strong

ark grayish brown silty clay loam
ttles
ottled brown and red silty clay in
mottled yellowish brown, red, and
ray silty clay in the lower part

more; mottled yellowish brown
ish gray silty clay

soil has a few rills and in a few
e of accelerated erosion in the
nough to greatly modify the
er of the original plow layer.
rties of Pelahatchie soil:

to moderately slow in the surface
art of the subsoil and very slow in

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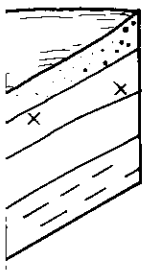


to 15 percent. Kisatchie soil is moderately deep and well drained and is on the hillsides and ridgetops. It formed in clayey sediment underlain by sandstone or siltstone. Kisatchie soil has slopes that range from 10 to 40 percent.

Smithdale soil and soils that are similar make up about 37 percent of the map unit. Providence soil and soils that are similar make up 22 percent, and Kisatchie soil and soils that are similar make up 15 percent. The included soils make up about 26 percent of the map unit.

The typical sequence, depth, and composition of the layers of Smithdale soil are as follows:

Surface layer:
0 to 4 inches; dark grayish brown fine sandy loam

Subsurface layer:
4 to 15 inches; light yellowish brown fine sandy loam

Subsoil:
15 to 52 inches; red and yellowish red sandy clay loam with strong brown mottles in the lower part
52 to 75 inches; red and yellowish red sandy loam

Important soil properties of Smithdale soil:

Permeability: Moderate

Available water capacity: Moderate

Soil reaction: Very strongly acid or strongly acid throughout

Surface runoff: Rapid

Erosion hazard: Severe

Seasonal water table: None within a depth of 6 feet

Flooding: None

Root zone: Deep and easily penetrated by plant roots

Shrink-swell potential: Low

The typical sequence, depth, and composition of the layers of Providence soil are as follows:

Surface layer:
0 to 6 inches; dark brown silt loam

Subsoil:
6 to 23 inches; brown silty clay loam
23 to 31 inches; yellowish brown silty clay loam
31 to 52 inches; firm, compact and brittle fragipan; it is yellowish brown mottled in shades of brown and gray and is silt loam in the upper part and clay loam in the lower part
52 to 60 inches; firm, compact and brittle fragipan; it is brown mottled in shades of brown and gray and is sandy clay loam

Important soil properties of Providence soil:

Permeability: Moderate in the surface layer and upper part of the subsoil and moderately slow in the fragipan

Available water capacity: Moderate

Soil reaction: Very strongly acid to medium acid throughout

Surface runoff: Medium to rapid

Erosion hazard: Severe

Seasonal water table: Perched water table above the fragipan at a depth of 1.5 to 3 feet during wet periods

Flooding: None

Root zone: Compact and brittle fragipan in the lower part of the subsoil limits root penetration and the amount of water available to plants

Shrink-swell potential: Moderate

The typical sequence, depth, and composition of the layers of Kisatchie soil are as follows:

Surface layer:
0 to 2 inches; dark grayish brown fine sandy loam

Subsurface layer:
2 to 11 inches; grayish brown fine sandy loam

Subsoil:
11 to 19 inches; pale olive clay loam that has brownish yellow mottles
19 to 23 inches; pale olive channery clay loam that has light yellowish brown and brownish yellow mottles

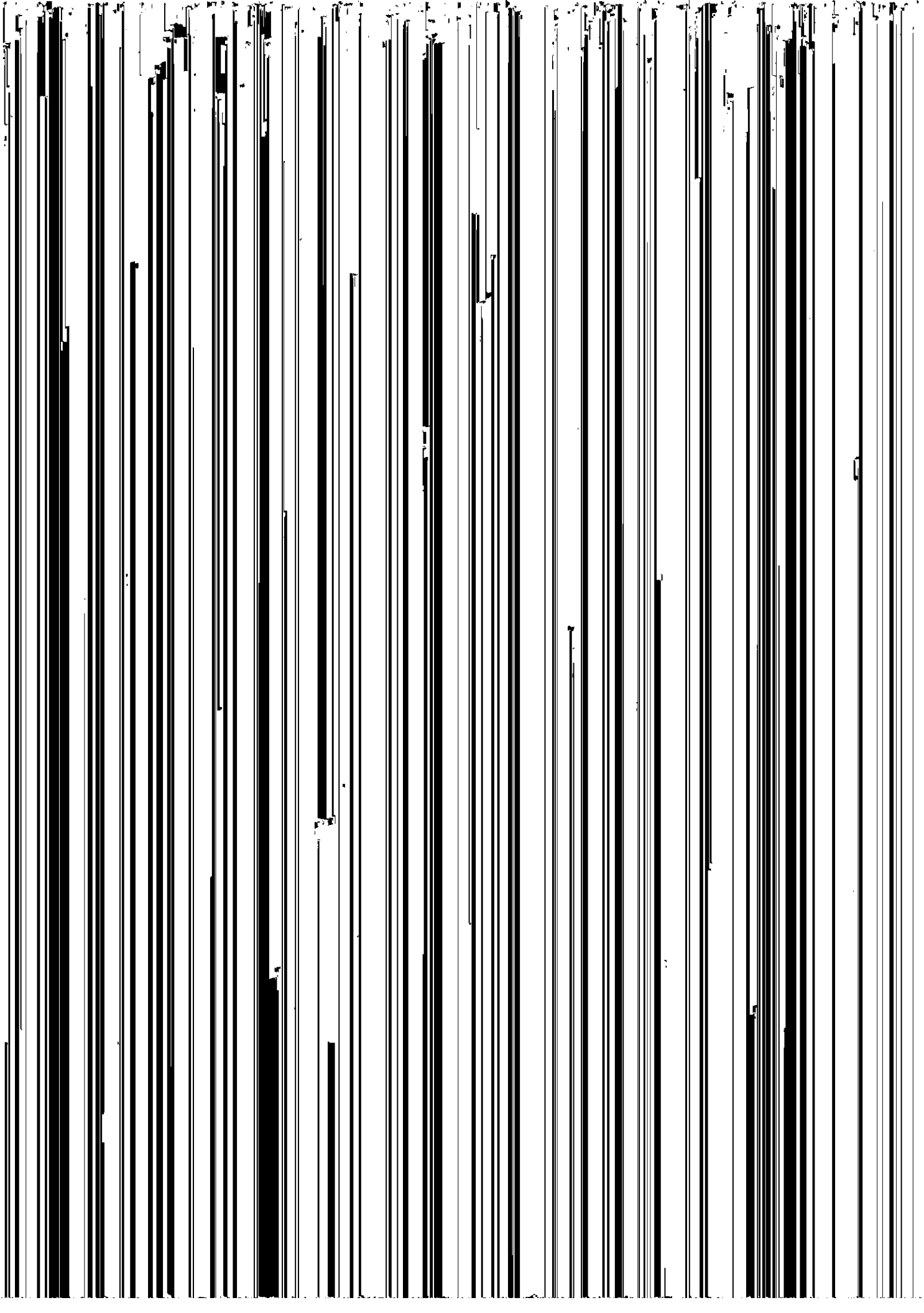
Underlying material:
23 to 40 inches or more; light yellowish brown and light brownish gray soft, fractured siltstone

Important soil properties of Kisatchie soil:

Permeability: Very slow

Available water capacity: Low

Soil reaction: Very strongly acid or strongly acid in the surface layer and subsurface layer and extremely



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ant roots

ell potential: Low

ical sequence, depth, and composition of the
Providence soil are as follows:

yer:
inches; yellowish brown silt loam

6 inches; yellowish red silty clay loam
29 inches; strong brown silt loam
63 inches; silt loam in the upper part and loam
the lower part, mottled throughout in shades of
ay and brown; firm, compact, and brittle
gipan

nt soil properties of Providence soil:

ity: Moderate in the surface layer and upper
of the subsoil and moderately slow in the
an

water capacity: Moderate

on: Very strongly acid to medium acid
ghout

noff: Medium or rapid

azard: Severe

water table: Perched water table above the
an at a depth of 1.5 to 3 feet during wet
ds

None

e: Compact and brittle fragipan in the lower part
subsoil limits root penetration

ell potential: Moderate

d with these soils in mapping are small areas of
Ora, and Savannah soils. These soils are on
ds. Also included are some small areas of
ils.
the soils in this map unit are used as pasture
land.
soils are poorly suited to and are not
nded for row crops and small grains because of
because the hazard of erosion is severe.
nt vegetation should be kept on these soils.
ale and Providence soils are moderately suited
nd legumes for hay and pasture. Overgrazing
when the soil is too wet causes surface
on and poor tilth and reduces the rate of

er:
nches; dark grayish brown silt loam

inches; strong brown silt loam
2 inches or more; silt loam in the upper part
loam in the lower part, mottled in shades of
n and gray; compact and brittle fragipan

soil properties of Providence soil:

: Moderate in the surface layer and upper
the subsoil and moderately slow through the
n

ater capacity: Moderate

n: Very strongly acid to medium acid
out

off: Slow to medium

ard: Moderate to severe

ater table: Perched water table above the
n at a depth of 1.5 to 3 feet during wet
s

lone

Compact and brittle fragipan in the lower part
subsoil limits root penetration

l potential: Moderate

ce layer—friable; easily tilled throughout a
ange of moisture content; tends to crust and
fter heavy rains

al sequence, depth, and composition of the
ppah soil are as follows:

er:
inches; brown silt loam

4 inches; yellowish red silty clay loam
32 inches; strong brown silty clay that has light
wnish gray mottles
60 inches; mottled gray, brown, and red clay

t soil properties of Tippah soil:

ty: Moderate in the surface layer and upper
f the subsoil and slow in the lower part of the
il

vater capacity: High

n acid
surface layer

above the
et during wet
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t of the subsoil

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Tippah soils

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ion is needed
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ne growing

The Providence soil has severe limitations for most urban uses. Low strength as it affects local streets and roads, slope as it affects small commercial buildings, and seasonal wetness are the major limitations. Special design and proper installation can alleviate these limitations. The moderately slow permeability in the fragipan and wetness are severe limitations for the use of this soil as septic tank absorption fields. These limitations can be alleviated by enlarging the absorption fields.

The Tippah soil has severe limitations for most urban uses. Low strength as it affects streets and roads, slope as it affects small commercial buildings, and seasonal wetness are the major limitations. Special design and proper installation can alleviate these limitations. The slow permeability in the clayey lower part of the subsoil and wetness are severe limitations for the use of this soil as septic tank absorption fields. These limitations can be alleviated by enlarging the absorption fields.

The soils in this map unit are in capability subclass IIIe. Providence soil is in woodland suitability group 8D, and Tippah soil is in woodland suitability group 9A.

67B—Kipling-Falkner association, undulating. This map unit consists of deep, somewhat poorly drained gently undulating or gently rolling soils on uplands. The soils in this map unit are in a regular and repeating pattern in the landscape. Individual areas are large enough to be mapped separately, but because of similar present or predicted uses, they were mapped as an association. The mapped areas range from 160 to more than 600 acres. The slopes range from 2 to 8 percent.

Kipling soil mainly is on lower elevations on the hillsides. It formed in clayey sediment. Falkner soil is on the upper elevations on the hillsides and on low ridges. It formed in a mantle of silty material underlain by clayey sediment.

The Kipling soil and soils that are similar make up about 41 percent of the map unit. Falkner soil and soils that are similar make up about 39 percent. The included soils make up about 20 percent of the map unit.

The typical sequence, depth, and composition of the layers of Kipling soil are as follows:

Surface layer:

0 to 2 inches; dark brown silt loam

Subsoil:

2 to 5 inches; yellowish brown silty clay loam that has pale brown mottles

5 to 40 inches; mottled yellowish brown, gray, and red clay

40 to 44 inches; light olive brown clay that has light brownish gray mottles

Substratum:

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his soil is moderately suited to grasses and legumes
ay and pasture. Using this soil for hay and pasture
tively controls erosion. The hazard of erosion
ases if row crops are grown. Grazing or overgrazing
n the soil is too wet causes compaction and poor
and reduces the rate of moisture infiltration. Good
tices to use in pasture management include proper
king, controlled grazing, and weed and brush control.
his soil is moderately suited to loblolly and shortleaf
s. Concerns in woodland management are slight.
ion is somewhat of a problem on the steeper
es. Water bars are needed on all sloping roads to
ent erosion, and grass should be established on
s following harvesting.
his soil has moderate limitations for most urban uses
use of steepness of slope. For small commercial
lings, the limitations are severe because of
pness of slope. This limitation can be alleviated by
ial design and proper installation. Slope is a
erate limitation to use of this soil as septic tank
rption fields. This limitation can be alleviated by
lling the septic tank absorption fields on the contour.
his Smithdale soil is in capability subclass VIe and in
dland suitability group 8A.

F—Maben-Smithdale association, hilly. This map
consists of deep, well drained, gently rolling to hilly
on uplands that have rounded hilltops and strongly
ing to steep hillsides. The valleys are narrow. The
in this map unit are in a regular and repeating
ern on the landscape. The mapped areas are large
ugh to be mapped separately, but because of similar
ent or predicted uses, they were mapped as an
ciation. The mapped areas range from 160 to more
1,500 acres. The slopes range from 5 to 35
ent.
aben soil is on the lower ridgetops and hillsides. This
formed in stratified loamy material and shaly clay.
thdale soil is on the higher ridgetops and upper
ides. This soil formed in loamy marine sediment.
aben soil and soils that are similar make up about 39
ent of the map unit. Smithdale soil and soils that are
lar make up about 25 percent. The included soils
e up about 36 percent of the map unit.
he typical sequence, depth, and composition of the
rs of Maben soil are as follows:

face layer:
0 to 6 inches; brown fine sandy loam

surface layer:
6 to 11 inches; mottled pale brown, yellowish brown,
and brown fine sandy loam

soil:

llowish red silty clay
llowish red silty clay that has red
thin gray clay strata

nly bedded stratified clay, very
oamy material mottled in shades
, red, and gray
nly bedded clays, sands, and
ıottled in shades of brown and

ies of Maben soils:

slow

: Moderate

cid to slightly acid in the surface
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depth, and composition of the
are as follows:

grayish brown fine sandy loam

brown very fine sandy loam

llowish red clay loam
llowish red sandy clay loam that
mottles
llowish red sandy loam that has
ets of sand grains

ies of Smithdale soil:

: Moderate

ıgly acid or strongly acid

Surface runoff: Rapid

Erosion hazard: Severe

Seasonal water table: None within a depth of 6 feet

Flooding: None

Root zone: Deep, easily penetrated by plant roots

Shrink-swell potential: Low

Included with these soils in mapping are some small areas of the Kirkville, Ora, Providence and Tippah soils. Kirkville soils are on flood plains. Ora, Providence, and Tippah soils are on uplands. Also included are small areas of soils that are steep and are moderately well drained. These soils have a alkaline clayey subsoil that is underlain by limestone. Permanent vegetation of grasses and legumes or trees should be maintained on these soils.

Maben and Smithdale soils are mostly used as woodland.

They are poorly suited to row crops, small grains, and pasture grasses and legumes because of steepness of slope and severe erosion hazard.

The soils in this map unit are moderately suited to loblolly and shortleaf pine. Concerns in woodland management for Maben soil are moderate, but plant competition is a slight concern. The hazard of erosion is a slight concern. Concerns in woodland management for Smithdale soil are slight, but equipment use is a moderate concern. The hazard of erosion is a moderate concern. Concerns in woodland management for harvesting the tree crop are moderate. Steepness of slope and rapid runoff cause washouts and formation of gullies on skid trails and haul roads. These can be alleviated by harvesting in drier periods, by placing skid trails, log landings, and haul roads properly and within limiting grades. After harvesting, water bars are needed on all sloping roads to prevent gully erosion. Roads should be seeded to grass to control erosion.

Maben soil has severe limitation for urban use. Low strength as it affects local roads and streets, high shrink-swell potential, and steepness of slope are major limitations. Special design and proper installation can alleviate these limitations. The steepness of slope and moderately slow permeability of the clayey subsoil are severe limitations to use as septic tank absorption fields. These limitations can be alleviated by enlarging the absorption fields and installing the septic tank absorption fields on the contour.

Smithdale soils have severe limitation to most urban uses because of steepness of slope. This limitation can be alleviated by special design and proper installation and by bank stabilization and plantings to control soil erosion. Steepness of slope is a severe limitation to use

of this soil as septic tank absorption fields. This limitation can be alleviated by the installing the absorption fields on the contour.

The soils in this map unit are in capability subclass VIIe. Maben soil is in woodland suitability group 8C, and Smithdale soil is in woodland suitability group 8R.

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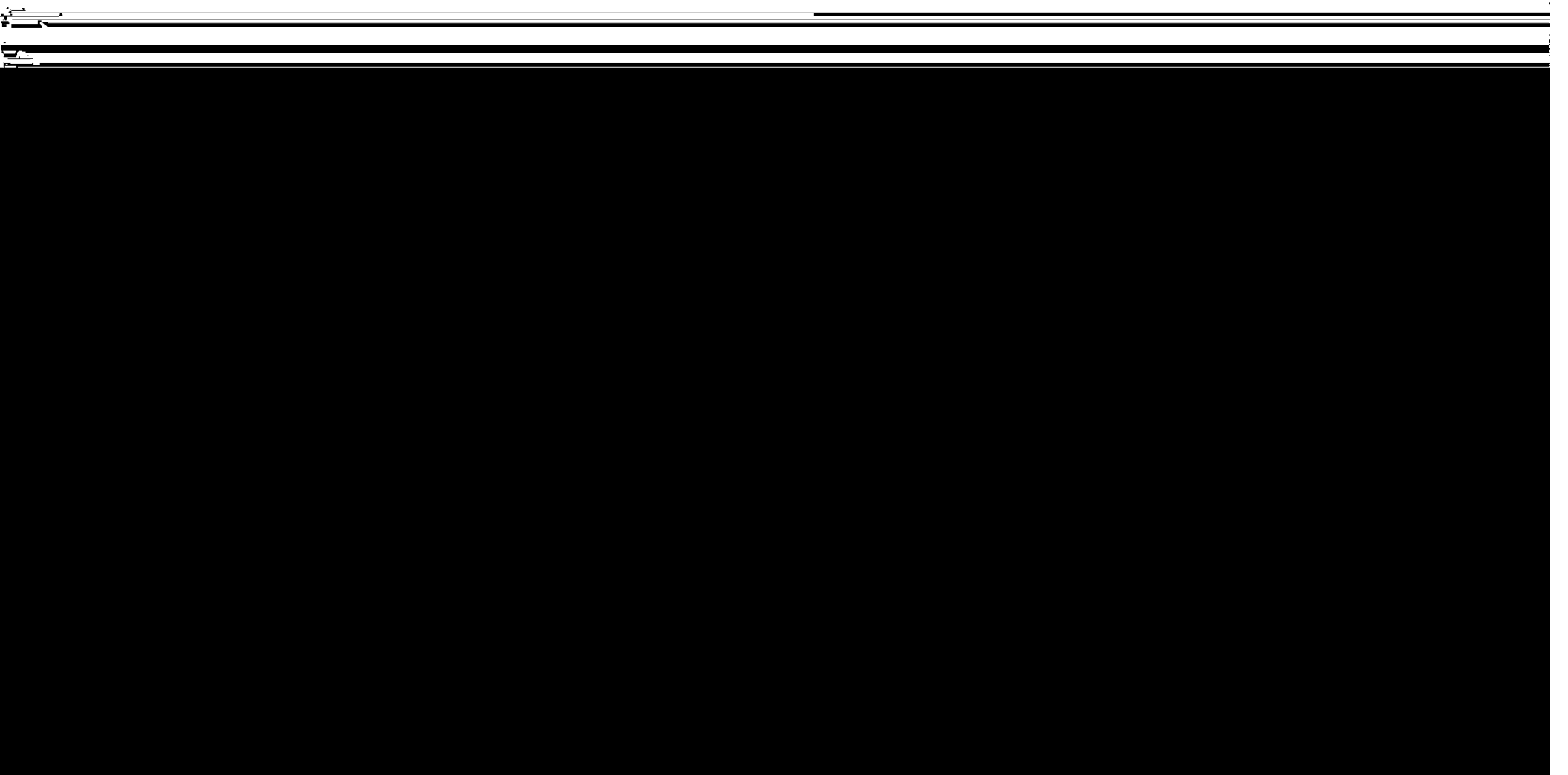

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s; appropriate and timely tillage; control of weeds,
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n and optimum levels of nitrogen, phosphorus,
um, and trace elements for each crop; effective
crop residue, barnyard manure, and green manure
and harvesting that insures the smallest possible

estimated yields reflect the productive capacity of
oil for each of the principal crops. Yields are likely
ase as new production technology is developed.
oductivity of a given soil compared with that of
oils, however, is not likely to change.
s other than those shown in table 6 are grown in
vey area, but estimated yields are not listed
e the acreage of such crops is small. The local
f the Soil Conservation Service or of the
ative Extension Service can provide information
he management and productivity of the soils for
rops.

apability Classification

l capability classification shows, in a general way,
tability of soils for use as cropland. Crops that
special management are excluded. The soils are
d according to their limitations for field crops, the
damage if they are used for crops, and the way
spond to management. The criteria used in
g the soils do not include major, and generally
ive, landforming that would change slope, depth,
r characteristics of the soils, nor do they include
e but unlikely major reclamation projects.
lity classification is not a substitute for
tations designed to show suitability and
ns of groups of soils for woodland and for
ering purposes.
e capability system, soils are generally grouped at
vels: capability class, subclass, and unit. Only
nd subclass are used in this survey. These levels
ined in the following paragraphs.
bility classes, the broadest groups, are
ated by Roman numerals I through VIII. The
ls indicate progressively greater limitations and
er choices for practical use. The classes are
l as follows:
s I soils have few limitations that restrict their use.
s II soils have moderate limitations that reduce the
of plants or that require moderate conservation
es.
s III soils have severe limitations that reduce the
of plants or that require special conservation
es, or both.
s IV soils have very severe limitations that reduce
ice of plants or that require very careful
ement, or both.

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such factors as soil
epth. The risk is *slight* if
k but do not uproot
ds cause an occasional
trees to break. Ratings
r care in thinning or
equipment may be
ow root systems in
for periodic salvage of
nance of a road and

dicate the likelihood of
able plants. *Plant*
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d soils, and on soils
holds moisture. The
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icial reforestation but
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al or artificial
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trees, expressed in
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T1. For example, a

planted properly on a well prepared site, and plants and soils should be maintained in good condition.

Soils that have good natural drainage and that warm up early in the spring are well suited to many vegetables. Examples of these soils are the Gillsburg, Kirkville, and Oaklimeter soils on the flood plains and the Cahaba, Leverett, Pelahatchie, Providence, Quitman, Savannah, and Tippah soils on stream terraces and gently sloping uplands.

Table 10 lists the suitability of the soils for grasses, vegetables, fruits and nuts, and ornamental shrubs.

Information and suggestions for growing special crops can be obtained from local offices of the Cooperative Extension Service or the Soil Conservation Service.

Recreation

Ernest E. Dorrill, landscape architect, Soil Conservation Service, helped prepare this section.

In table 11, the soils of the survey area are rated according to the limitations that affect their suitability for recreation. The ratings are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewerlines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation are also important. Soils subject to flooding are limited for recreational use by the duration and intensity of flooding and the season when flooding occurs. In planning recreation facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

In table 11, the degree of soil limitation is expressed as slight, moderate, or severe. *Slight* means that soil properties are generally favorable and that limitations are minor and easily overcome. *Moderate* means that limitations can be overcome or alleviated by planning, design, or special maintenance. *Severe* means that soil properties are unfavorable and that limitations can be offset only by costly soil reclamation, special design, intensive maintenance, limited use, or by a combination of these measures.

The information in table 11 can be supplemented by other information in this survey, for example, interpretations for septic tank absorption fields in table 14 and interpretations for dwellings without basements and for local roads and streets in table 13.

Camp areas (fig. 20) require site preparation such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The best soils have gentle slopes and are not wet

or subject to flooding during the period of use. The

depth of the soil over bedrock or a hardpan should be

legumes are depth
e layer, available
, and slope. Soil
b considerations.
e fescue, ryegrass,

r naturally
ng weeds. Soil
growth of these
ture of the surface
ss, and flood
sture are also
aceous plants are
erry, wooly croton,

tory produce mast
k, and foliage. Soil
growth of
of the root zone,
ness. Examples of
sweetgum, ash,
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e for planting on
n-olive, bicolor

nd seeds. Soil
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cover are depth of
y, and wetness.
olly pine, shortleaf
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t produce fruit,
perties and
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alinity, and soil
kleberry, southern
tyberry.
ennial, wild
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are excluded. Soil
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ts of cropland,
50 acres in Rankin

given in the following tables: Building site development, Sanitary facilities, Construction materials, and Water management. The ratings are based on observed performance of the soils and on the estimated data and test data in the "Soil properties" section.

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil within a depth of 5 or 6 feet, and because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations must be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about grain-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 to 6 feet of the surface, soil wetness, depth to a seasonal high water table, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kind of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to: evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, earthfill, and topsoil; plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

Building Site Development

Table 13 shows the degree and kind of soil limitations that affect shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required. Special feasibility studies may be required where the soil limitations are severe.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for basements, graves, utility lines, open ditches, and other purposes. The ratings are based on soil properties, site features, and observed performance of the soils. The ease of digging, filling, and compacting is affected by the depth to bedrock, a cemented pan, or a very firm dense layer; stone content; soil texture; and slope. The time of the year that excavations can be made is affected by the depth to a seasonal high water table and the susceptibility of the soil to flooding. The resistance of the excavation walls or banks to sloughing or caving is affected by soil texture and the depth to the water table.

Dwellings and small commercial buildings are structures built on shallow foundations on undisturbed soil. The load limit is the same as that for single-family dwellings no higher than three stories. Ratings are made for small commercial buildings without basements, for dwellings with basements, and for dwellings without basements. The ratings are based on soil properties, site features, and observed performance of the soils. A high water table, flooding, shrink-swell potential, and organic layers can cause the movement of footings. A high water table, depth to bedrock or to a cemented pan, large stones, and flooding affect the ease of excavation and construction. Landscaping and grading that require cuts and fills of more than 5 to 6 feet are not considered.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material, a base of gravel, crushed rock, or stabilized soil material, and a flexible or rigid surface. Cuts and fills are generally limited to less than 6 feet. The ratings are based on soil properties, site features, and observed performance of the soils. Depth to bedrock or to a cemented pan, a high water table, flooding, large stones, and slope affect the ease of excavating and grading. Soil strength (as inferred from the engineering classification of the soil), shrink-swell potential, frost-action potential, and depth to a high water table affect the traffic-supporting capacity.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. The ratings are based on soil properties, site features, and observed performance of the soils. Soil reaction, a high water table, depth to bedrock or to a cemented pan, the available water capacity in the upper 40 inches, and the content of salts, sodium, and sulfidic materials affect plant growth. Flooding, wetness, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer affect trafficability after vegetation is established.

Sanitary Facilities

Table 14 shows the degree and the kind of soil limitations that affect septic tank absorption fields, sewage lagoons, and sanitary landfills. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required.

Table 14 also shows the suitability of the soils for use as daily cover for landfills. A rating of *good* indicates that soil properties and site features are favorable for the use and that good performance and low maintenance can be expected; *fair* indicates that soil properties and site features are moderately favorable for the use and one or more soil properties or site features make the soil less desirable than the soils rated good; and *poor* indicates that one or more soil properties or site features are unfavorable for the use and overcoming the unfavorable properties requires special design, extra maintenance, or costly alteration.

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 72 inches is evaluated. The ratings are based on soil properties, site features, and observed performance of the soils. Permeability, a high water table, depth to bedrock or to a cemented pan, and flooding affect absorption of the effluent. Large stones and bedrock or a cemented pan interfere with installation.

Unsatisfactory performance of septic tank absorption fields, including excessively slow absorption of effluent, surfacing of effluent, and hillside seepage, can affect public health. Ground water can be polluted if highly permeable sand and gravel or fractured bedrock is less than 4 feet below the base of the absorption field, if slope is excessive, or if the water table is near the surface. There must be unsaturated soil material beneath

the absorption field to filter the effluent effectively. Many local ordinances require that this material be of a certain thickness.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Lagoons generally are designed to hold the sewage within a depth of 2 to 5 feet. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water.

Table 14 gives ratings for the natural soil that makes up the lagoon floor. The surface layer and, generally, 1 or 2 feet of soil material below the surface layer are excavated to provide material for the embankments. The ratings are based on soil properties, site features, and observed performance of the soils. Considered in the ratings are slope, permeability, a high water table, flooding, and content of organic matter.

Excessive seepage due to rapid permeability of the soil or a water table that is high enough to raise the level of sewage in the lagoon causes a lagoon to function unsatisfactorily. Pollution results if seepage is excessive or if floodwater overtops the lagoon. A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope can cause construction problems.

Sanitary landfills are areas where solid waste is disposed of by burying it in soil. There are two types of landfill—trench and area. In a trench landfill, the waste is placed in a trench. It is spread, compacted, and covered daily with a thin layer of soil excavated at the site. In an area landfill, the waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site.

Both types of landfill must be able to bear heavy vehicular traffic. Both types involve a risk of ground water pollution. Ease of excavation and revegetation needs to be considered.

The ratings in table 14 are based on soil properties, site features, and observed performance of the soils. Permeability, depth to bedrock or to a cemented pan, a high water table, slope, and flooding affect both types of landfill. Texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium affect trench type landfills. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, a limitation rated slight or moderate may not be valid. Onsite investigation is needed.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area type sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste.

Soil texture, wetness, coarse fragments, and slope affect the ease of removing and spreading the material during wet and dry periods. Loamy or silty soils that are free of large stones or excess gravel are the best cover for a landfill. Clayey soils are sticky or cloddy and are difficult to spread.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over the water table to permit revegetation. The soil material used as final cover for a landfill should be suitable for plants. The surface layer generally has the best workability, more organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

Construction Materials

Table 15 gives information about the soils as a source of roadfill, sand, gravel, and topsoil. The soils are rated *good, fair,* or *poor* as a source of roadfill and topsoil. They are rated as a probable or improbable source of sand and gravel. The ratings are based on soil properties and site features that affect the removal of the soil and its use as construction material. Normal compaction, minor processing, and other standard construction practices are assumed. Each soil is evaluated to a depth of 5 or 6 feet.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the soil material below the surface layer to a depth of 5 or 6 feet. It is assumed that soil layers will be mixed during excavating and spreading. Many soils have layers of contrasting suitability within their profile. The table showing engineering index properties provides detailed information about each soil layer. This information can help determine the suitability of each layer for use as roadfill. The performance of soil after it is stabilized with lime or cement is not considered in the ratings.

The ratings are based on soil properties, site features, and observed performance of the soils. The thickness of suitable material is a major consideration. The ease of excavation is affected by large stones, a high water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the engineering classification of the soil) and shrink-swell potential.

Soils rated *good* contain significant amounts of sand or gravel or both. They have at least 5 feet of suitable material, low shrink-swell potential, few cobbles and stones, and slopes of 15 percent or less. Depth to the water table is more than 3 feet. Soils rated *fair* are more than 35 percent silt- and clay-sized particles and have a plasticity index of less than 10. They have moderate

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a slope to reduce erosion and conserve moisture by intercepting runoff. Slope, wetness, large stones, and depth to bedrock or to a cemented pan affect the construction of terraces and diversions. A restricted rooting depth, a severe hazard of wind or water erosion, an excessively coarse texture, and restricted permeability adversely affect maintenance.

Grassed waterways are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity. Large stones, wetness, slope, and depth to bedrock or to a cemented pan affect the construction of grassed waterways. A hazard of wind erosion, low available water capacity, restricted rooting depth, toxic substances such as salts or sodium, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

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The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to grain-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, SP-SM.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of grain-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20, or higher, for the poorest.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area, or from nearby areas, and on field examination.

The estimates of grain-size distribution, liquid limit, and plasticity index are rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is omitted in the table.

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list that follows. The codes in parentheses refer to published methods *(11)*.

The particle-size analyses were obtained using Day's hydrometer method *(7)*.

Extractable cations—ammonium acetate pH 7.0, uncorrected; calcium (6N2), magnesium (602), sodium (6P2), potassium (6Q2).

Extractable acidity—barium chloride-triethanolamine I (6H1a).

Cation-exchange capacity—sum of cations (5A3a).

Base saturation—sum of cations, TEA, pH 8.2 (5C3).

Reaction (pH)—1:1 water dilution (8C1a).

Organic carbon—dichromate, ferric sulfate titration (6A1a).

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories *(9)*. Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or on laboratory measurements. Table 21 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Ten soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Ultisol.

SUBORDER. Each order is divided into suborders, primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Udult (*Ud*, meaning humid, plus *ult*, from Ultisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Fragiudults (*Frag*, meaning brittle, plus *udult*, the suborder of the Ultisols that have a fragipan).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other known kind of soil. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Typic* identifies the subgroup that typifies the great group. An example is Typic Fragiudults.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Mostly the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineral content, temperature regime, depth of the root zone, consistence, moisture equivalent, slope, and permanent cracks. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine-loamy, siliceous, thermic, Typic Fragiudults.

SERIES. The series consists of soils that have similar horizons in their profile. The horizons are similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile. There can be some variation in the texture of the surface layer or of the substratum within a series. The Savannah series is an example of fine-loamy, siliceous, thermic Typic Fragiudults in Rankin County.

Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. The descriptions are arranged in alphabetic order.

Characteristics of the soil and the material in which it formed are identified for each series. The soil is compared with similar soils and with nearby soils of other series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the *Soil Survey Manual (8)*. Many of the technical terms used in the descriptions are defined in *Soil Taxonomy (9)*. Unless otherwise stated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

The map units of each soil series are described in the section "Detailed Soil Map Units."

Arkabutla Series

The Arkabutla series consists of deep, somewhat poorly drained soils that formed in silty sediment. These soils are on flood plains. The slopes range from 0 to 2 percent. The soils of the Arkabutla series are fine-silty, mixed, acid, thermic Aeric Fluvaquents.

Arkabutla soils are associated with Cahaba, Cascilla, Oaklimeter, and Urbo soils. Cahaba soils are on stream terraces and are well drained. These soils do not have chroma of 2 or less within a depth of 30 inches of the

surface. Cascilla soils are on flood plains, but they are well drained. These soils do not have chroma of 2 or less within a depth of 30 inches of the surface. Oaklimeter soils are on flood plains, but they are moderately well drained. These soils are coarse-silty in the 10- to 40-inch control section. Urbo soils are on flood plains and are somewhat poorly drained. These soils are fine in the 10- to 40-inch control section.

Typical pedon of Arkabutla silt loam, in an area of Cascilla-Arkabutla association, frequently flooded; in a wooded area, 2 miles south of Byram-Florence road, 1,200 feet east of Pearl River, 880 feet east of small gravel road, SE1/4NW1/4 sec. 31, T. 4 N., R. 1 E.

A1—0 to 3 inches; very dark grayish brown (10YR 3/2) silt loam; weak medium granular structure; friable; many fine and medium roots; common black stains; very strongly acid; clear smooth boundary.

A2—3 to 8 inches; dark brown (10YR 4/3) silt loam; common medium distinct grayish brown (10YR 5/2) mottles; weak medium subangular blocky structure; friable; common fine roots; very strongly acid; clear smooth boundary.

Bw—8 to 18 inches; mottled light brownish gray (10YR 6/2), yellowish brown (10YR 5/4), and dark yellowish brown (10YR 4/4) silt loam; weak medium subangular blocky structure; friable, slightly plastic; common fine roots; few fine black concretions; very strongly acid; gradual smooth boundary.

Bg1—18 to 34 inches; light brownish gray (10YR 6/2) silt loam; common fine and medium distinct yellowish brown (10YR 5/4) mottles; weak medium subangular blocky structure; friable, slightly plastic; few fine and medium black concretions; common fine and medium strong brown (7.5YR 5/8) stains; very strongly acid; gradual wavy boundary.

Bg2—34 to 61 inches; light brownish gray (10YR 6/2) silty clay loam; weak medium subangular blocky structure; firm, slightly plastic and sticky; few fine roots; common fine and medium strong brown (7.5YR 5/8) stains; very strongly acid.

The thickness of the solum is more than 40 inches. Reaction ranges from very strongly acid or strongly acid throughout except in areas where the surface layer has been limed.

The A1 horizon has hue of 10YR, value of 2 to 4, and chroma of 1 or 2. It is less than 4 inches thick. Some pedons have an A2 horizon that has hue of 10YR, value of 4 or 5, and chroma of 2 to 4. If present, mottles are few or common and are in shades of brown or gray.

The Bw horizon is mottled in shades of brown, yellow, and gray; or it has hue of 10YR, value of 4 or 5, and chroma of 3 to 6. Mottles of chroma of 2 or less range from few to many. The Bg horizon has hue of 10YR, value of 4 to 6, and chroma of 2 or less. Commonly, mottles are few to many and are in shades of brown. The B horizon is silt loam, loam, or silty clay loam. The 10- to 40-inch control section is 20 to 35 percent clay. The Bw horizon and the upper part of the Bg horizon have few to many black and brown concretions.

Cahaba Series

The Cahaba series consists of deep, well drained soils that formed in loamy and sandy alluvial deposits. These soils are on stream terraces. The slopes range from 0 to 2 percent. The soils of the Cahaba series are fine-loamy, siliceous, thermic Typic Hapludults.

Cahaba soils are associated with Arkabutla, Cascilla, and Tippo soils. Arkabutla soils are on flood plains and are somewhat poorly drained. These soils have a fine-silty control section. Cascilla soils are well drained, but they are on flood plains. These soils have a fine-silty control section. Tippo soils are on low stream terraces and flood plains and are somewhat poorly drained. These soils have a coarse-silty control section.

Typical pedon of Cahaba fine sandy loam, 0 to 2 percent slopes; in a field, 2.75 miles north of Sand Hill, 1,850 feet west of road, SE1/4NW1/4 sec. 14, T. 8 N., R. 4 E.

Ap—0 to 6 inches; dark yellowish brown (10YR 4/4) fine sandy loam; weak fine granular structure; very friable; many fine roots; medium acid; abrupt smooth boundary.

Bt1—6 to 15 inches; yellowish red (5YR 4/6) clay loam; moderate medium subangular blocky structure; friable; many fine roots; continuous clay films on faces of peds; very strongly acid; clear smooth boundary.

Bt2—15 to 21 inches; yellowish red (5YR 4/6) loam; moderate medium subangular blocky structure; friable; few fine roots; thin patchy clay films on faces of peds; very strongly acid; clear smooth boundary.

Bt3—21 to 41 inches; yellowish red (5YR 5/8) loam; weak medium subangular blocky structure; friable; few fine roots; thin patchy clay films on faces of peds; very strongly acid; clear smooth boundary.

C1—41 to 53 inches; yellowish brown (10YR 5/4) loamy sand; massive; very friable; strongly acid; abrupt smooth boundary.

C2—53 to 66 inches; light yellowish brown (10YR 6/4) loamy sand; massive; very friable; few fine roots; very strongly acid; abrupt smooth boundary.

C3—66 to 75 inches; brown (10YR 5/3) stratified loamy sand and sandy loam; massive; very friable; very strongly acid.

The thickness of the solum ranges from 36 to 60 inches. Reaction ranges from very strongly acid to medium acid except in areas where the surface layer has been limed.

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rown and gray. If present, brown and black
are few or common. The Bg horizon has hue
lue of 5 to 7, and chroma of 1 or 2 or is
hades of gray, yellow, or brown. Brown and
etions are few to many.
d soil horizon has hue of 10YR, value of 5 to
ma of 1 or 2 or is mottled in shades of gray,
rown. In addition, this horizon has few to
es of gray silty material between prism faces.
ilt loam or silty clay loam. Fine to coarse,
rown concretions are few to many.

Series

on series consists of deep, poorly drained
rmed in silty alluvium. These soils are on low
aces and flood plains. The slopes range from
nt. The soils of the Guyton series are fine-
us, thermic Typic Glossaqualfs.
oils are associated with Leverett and Tippo
ett soils are on low stream terraces, but they
lined. Tippo soils are on low stream terraces
lains, but they are somewhat poorly drained.
have a coarse-silty control section.
edon of Guyton silt loam, occasionally
a wooded area, 1,700 feet southwest of a
ie, 75 feet west of paved road, 1,300 feet
ssisssippi State Highway 25, in Luckney
SE1/4SW1/4 sec. 23, T. 6 N., R. 2 E.

ch; grayish brown (10YR 5/2) silt loam; weak
n granular structure; friable; many fine and
n roots; very strongly acid; clear smooth
ry.
12 inches; light brownish gray (2.5Y 6/2) silt
common fine and medium distinct light
sh brown (10YR 6/4) mottles; weak medium
ular blocky structure; friable; few fine roots;
e distinct brown (7.5YR 5/4) stains; common
res; very strongly acid; gradual wavy
ry.
21 inches; light brownish gray (10YR 6/2) silt
common fine and medium distinct yellowish
(10YR 5/8) mottles; weak medium
ular blocky structure; friable; common fine
edium roots; many fine pores; common
sh red (5YR 4/6) stains on surfaces of peds;
rongly acid; clear irregular boundary.

Btg/E—21 to 29 inches; light brownish gray (2.5Y 6/2) silt loam (B); many fine and medium yellowish brown (10YR 5/6) mottles; moderate medium subangular blocky structure; friable; common fine and medium roots; common fine pores; about 20 percent, by volume, vertical tongues (E) of light gray (10YR 7/2) silt; very strongly acid; gradual irregular boundary.

Btg1—29 to 44 inches; light brownish gray (2.5Y 6/2) silty clay loam; many medium distinct light yellowish brown (10YR 6/4) mottles; moderate medium subangular blocky structure; firm; few fine roots; patchy clay films on faces of peds; light gray (10YR 7/2) silt coatings along vertical surfaces of peds; very strongly acid; gradual wavy boundary.

Btg2—44 to 65 inches; light brownish gray (2.5Y 6/2) silty clay loam; many medium distinct yellowish brown (10YR 5/6) mottles; moderate medium subangular blocky structure; friable; common fine roots; few patchy clay films on faces of peds; light gray (10YR 7/2) silt coatings along vertical surfaces of peds; strongly acid.

The thickness of the solum ranges from 50 to 80 inches. Exchangeable sodium in the lower part of the solum ranges from 10 to 40 percent. Reaction ranges from extremely acid to strongly acid in the A horizon and upper part of the B horizon except in areas where the surface layer has been limed and ranges from strongly acid to neutral in the lower part of the B horizon.

The A horizon has hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 2 or 3.

The E horizon has hue of 10YR or 2.5Y, value of 5 to 8, and chroma of 1 or 2. Mottles in shades of brown range from few to many. Texture is silt loam, loam, or very fine sandy loam. The lower boundary of the E horizon is clear irregular or abrupt irregular. Tongues extend from the E horizon into the Bt horizon.

The Bt horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 1 or 2. Few to many mottles are in shades of brown or gray. Texture is silt loam, silty clay loam, or clay loam.

Some pedons have BC and C horizons that have hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 1 or 2. Texture is silt loam, silty clay loam, clay loam, or sandy clay loam.

Kipling Series

The Kipling series consists of deep, somewhat poorly drained soils that formed in clayey material. These soils are on uplands. The slopes range from 0 to 8 percent. The soils of the Kipling series are fine, montmorillonitic, thermic Vertic Hapludalfs.

Kipling soils are associated with Falkner, Pelahatchie, and Tippah soils, all of which have fine-silty control sections. Falkner soils are on uplands and stream terraces and are somewhat poorly drained. Pelahatchie

on has hue of 2.5YR, 5YR, 7.5YR, 10YR,
of 4 or 5, and chroma of 4 to 8. This
v to many mottles of chroma of 2 or less
shades of yellow, brown, gray, and red.
s, the lower part of the Bt horizon has
.5Y or 5Y, value of 5 to 7 and chroma of
mottles in shades of brown and yellow.
clay loam, silty clay, or clay. The content
article-size control section, the upper 20
t horizon, ranges from 35 to 60 percent
is 45 to 55 percent.
n typically is mottled in shades of yellow,
l gray or has a matrix of 10YR, 2.5Y, or
of 5 to 7, and chroma of 1 to 4. Mottles
y in shades of gray, brown, and yellow.
clay or clay. Manganese concretions in
re few to many, and lime concretions, if
w to many.

ries

series consists of deep, moderately well
at formed in loamy alluvial material.
on flood plains. The slopes are 0 to 2
oils of the Kirkville series are coarse-
s, thermic Fluvaquentic Dystrochrepts.
are associated with Gillsburg, Oaklimeter,
These associated soils are on flood
g soils are somewhat poorly drained. They
silty control section. Oaklimeter soils are
l drained. They have a coarse-silty control
oils are somewhat poorly drained. They
ntrol section.
e of Kirkville fine sandy loam, occasionally
rmudagrass pasture, 4.5 miles east of
U.S. Highway 80, 1.25 miles southeast
unty road, 230 feet north of pavement,
t southeast of U.S. Interstate Highway
/4 sec. 16, T. 5 N., R. 4 E.

nes; brown (10YR 5/3) fine sandy loam;
granular structure; friable; many fine and
ots; few dark stains; slightly acid; clear
undary.
nches; brown (10YR 4/3) loam; common
ale brown (10YR 6/3) and dark yellowish
YR 4/4) mottles; weak medium
blocky structure; friable; common fine
mon fine brown concretions; common fine
ngly acid; gradual smooth boundary.
inches; mottled yellowish brown (10YR
yellowish brown (10YR 6/4), light
ray (10YR 6/2), and dark yellowish brown
) loam; weak medium subangular blocky
riable; few fine roots; few fine brown
s; very strongly acid; gradual smooth

Bg1—47 to 65 inches; light brownish gray (10YR 6/2) loam; common fine faint pale brown (10YR 6/3) and common medium distinct yellowish brown (10YR 5/4) mottles; weak medium subangular blocky structure; friable; few fine roots; common yellowish red (5YR 5/8) stains; very strongly acid; gradual smooth boundary.

Bg2—65 to 71 inches; light brownish gray (10YR 6/2) loam; distinct yellowish brown (10YR 5/4) and strong brown (7.5YR 5/8) mottles; weak medium subangular blocky structure; friable; few fine roots; many fine and medium black and brown concretions and stains; very strongly acid.

The thickness of the solum ranges from 30 to more than 60 inches. Reaction is very strongly acid or strongly acid throughout except in areas where the surface layer has been limed.

The A horizon has hue of 10YR, value of 4 or 5, and chroma of 2 to 4.

The Bw1 horizon has hue of 10YR, value of 4 or 5, and chroma of 3 to 6. The Bw2 horizon is mottled in shades of brown and gray or has a matrix of 10YR hue, value of 4 or 5, and chroma of 3 to 6. Mottles of chroma of 2 or less range from few to many. The Bg horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 2 or less. Mottles are few to many in shades of brown and yellow. The B horizon is loam, sandy loam, or fine sandy loam. The content of clay in this horizon ranges from 10 to 18 percent. Few to many brown, red, or black concretions are in the lower part of the B horizon.

Some pedons have a C horizon that has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 2 or less. This horizon has few to many mottles in shades of gray or brown or is mottled in shades of brown and gray. Texture is fine sandy loam, sandy loam, or loam.

Kisatchie Series

The Kisatchie series consists of moderately deep, well drained soils that formed in acid, clayey sediment and the underlying siltstone or sandstone. These soils are on dissected uplands. The slopes range from 10 to 40 percent. The soils of the Kisatchie series are fine, montmorillonitic, thermic Typic Hapludalfs.

The Kisatchie soils are associated with Providence, Smithdale, and Tippan soils. Providence soils are on uplands and stream terraces, but they are moderately well drained. These soils have a fine-silty control section. Providence soils have a fragipan. Smithdale soils are on uplands and are well drained. These soils have a fine-loamy control section, and the solum is more than 60 inches thick. Tippah soils are on uplands, but are moderately well drained. These soils have a fine-silty control section, and the solum is more than 60 inches thick.

Typical pedon of Kisatchie fine sandy loam; in an area of Smithdale-Providence-Kisatchie association, hilly; in a wooded area 4.5 miles southeast of Brandon along Shiloh Road, 500 feet south of pavement, NE1/4NW1/4 sec. 33, T. 5 N., R. 4 E.

A—0 to 2 inches; dark grayish brown (10YR 4/2) fine sandy loam; weak fine granular structure; very friable; many fine and medium roots; very strongly acid; clear smooth boundary.

E—2 to 11 inches; grayish brown (10YR 5/2) fine sandy loam; weak coarse granular structure; friable; common fine and medium roots; very strongly acid; clear smooth boundary.

Bt1—11 to 19 inches; pale olive (5Y 6/3) clay loam; common medium distinct brownish yellow (10YR 6/6) mottles; moderate medium subangular blocky structure; firm, plastic and sticky; common fine roots; continuous clay films on faces of peds; very strongly acid; gradual wavy boundary.

Bt2—19 to 23 inches; pale olive (5Y 6/3) channery clay loam; common medium distinct brownish yellow (10YR 6/6) and light yellowish brown (10YR 6/4) mottles; weak medium subangular blocky structure; firm; few fine roots; patchy clay films on faces of peds; 30 percent light brownish gray (2.5Y 6/2) siltstone fragments 1/2 to 1 centimeter thick and 2 to 3 centimeters long, horizontally oriented; very strongly acid; clear smooth boundary.

Cr—23 to 40 inches; light yellowish brown (2.5Y 6/4) and light brownish gray (10YR 6/2) soft siltstone; clay flows in vertical cracks, yellow (10YR 7/8) stains along planes; extremely acid.

The thickness of the solum ranges from 20 to 40 inches. The solum is underlain by siltstone or sandstone. Reaction is very strongly acid or strongly acid in the A and E horizons and extremely acid or very strongly acid in the Bt and Cr horizons.

The A horizon has hue of 10YR, value of 3 or 4, and chroma of 1 or 2.

The E horizon has hue of 10YR, value of 4 to 6, and chroma of 1 or 2. Texture is fine sandy loam or very fine sandy loam.

The Bt horizon has hue of 5Y to 10YR, value of 5 or 6, and chroma of 2 to 6. Mottles are few to common in shades of brown. Texture is silty clay, silty clay loam, clay loam, or the channery analogs of these textures. The content of clay in the upper 20 inches of the B horizon ranges from 35 to 55 percent. The lower part of the Bt horizon has 15 to 30 percent siltstone or sandstone fragments, by volume.

The Cr horizon is weathered sandstone or siltstone.

Leverett Series

The Leverett series consists of deep, well drained soils that formed in silty material. These soils are on low stream terraces. The slopes range from 0 to 2 percent.

and light gray (10YR 7/2) silt loam;
edium subangular blocky structure;
patchy clay films on faces of peds; many
e black and brown concretions; strongly

of the solum is more than 60 inches.
from very strongly acid to medium acid
where the surface layer has been limed.
has hue of 10YR, value of 4 or 5, and

t of the Bt horizon has hue of 7.5YR or
to 6, and chroma of 3 to 6. The upper
Bt horizon, the particle-size control
nan 15 percent sand that is coarser than
nd 8 to 15 percent clay. The lower part
7.5YR or 10YR, value of 4, and chroma
in some pedons are mottles of chroma
he lower part of the horizon is mottled in
and gray. The B part of the B/E
of 7.5YR or 10YR, value of 4 to 6, and
. Mottles of chroma of 2 or less are few
part has about 15 to 40 percent, by
tongues that have hue of 10YR, value
roma of 2.
t of the Btc horizon has hue of 7.5YR or
to 6, and chroma of 3 to 6. It
ray silt coatings on vertical faces of
present, are in shades of brown or gray
few to many. The lower part is mottled in
and gray or has colors similar to those
of the horizon.

s

ries consists of deep, well drained soils
ratified loamy material and shaly clay.
on uplands. The slopes range from 5 to
soils of the Maben series are fine,
lltic Hapludalfs.
re associated with Smithdale and Tippah
soils are on uplands and are well
oils have a fine-loamy control section.
on uplands, but they are moderately
ese soils have a fine-silty control section.
of Maben fine sandy loam, in an area of
e association, hilly; in a cutover loblolly
niles east of Pelahatchie on U.S.
miles south on county road, 0.5 mile
oad, 1,800 feet south of gravel road,
c. 13, T. 5 N., R. 5 E.

es; brown (10YR 5/3) fine sandy loam;
ranular structure; friable; many fine and
ts; strongly acid; clear smooth boundary.
es; mottled pale brown (10YR 6/3),
own (10YR 5/4), and brown (10YR 5/3)

s range from 0
series are
Dystrochrepts.
abutla,
se associated
e somewhat
rol section.
a fine-silty
hat poorly
depth of 20
derately well
l section.
ccasionally
tfield on
south of
1/4SW1/4

10YR 4/4) silt
ry friable;
k concretions;
dary.
sh brown
/4), and brown
ubangular
roots;
strongly acid;

vish brown
YR 6/4), and
m; weak
friable;
medium brown
cid; gradual

rown (10YR
), and brown
smatic
angular blocky
part; few
common fine
ions; light
and coatings
ear wavy

ay (10YR 6/2)
sh brown
prismatic
angular blocky
fine and
gly acid;

vnish gray
YR 4/4), and
rse prismatic
angular blocky

id; clear smooth

(5YR 5/6) sandy clay
angular blocky
ts; few fine pores;
ertical and horizontal
cid; gradual smooth

llowish red (5YR 4/6),
d light brownish gray
weak coarse prismatic
medium subangular
e roots between prisms;
65 percent of the mass;
clay films on faces of
YR 6/2) seams of
few fine black
gravel; very strongly

ong brown (7.5YR
6/6), light yellowish
brownish gray (10YR
natic structure parting
ular blocky structure;
in about 65 percent of
mon fine voids; few
peds; few fine quartz
nish gray (10YR 6/2)
strongly acid.

om 18 to 34 inches.
ly acid or strongly acid
the surface layer has

f 10YR, value of 4 or 5,
.5Y, value of 4 or 5,

on that has hue of
a of 2. Texture is fine

or 2.5YR, value of 4 or
is clay loam, sandy clay
y in this horizon is
the content of silt is

ades of yellow, brown,
llowish red to yellowish
gray, yellow, or red. The
when dry and brittle
ne fragipan, the matrix
of the volume. Texture
ly loam. Black and
nge from few to many,
few and range from fine

ades of yellow, brown,
llowish red to yellowish

ky structure; firm, plastic
ay films on faces of
surfaces of peds; few
tions; medium acid;

llowish brown (10YR
gray (10YR 6/2) silty
sides form wedge-
to moderate medium
very firm, sticky and
me nodules; few fine
aline.

erages about 40 inches
. The thickness
rt distance. Depth to the
n 36 to 55 inches. The
ry strongly acid to
ere the surface layer has
ges from strongly acid to
mildly alkaline or

R; value of 2 or 3, and
oam or silty clay loam.
lons. The AB horizon
, and chroma of 3 or 4.
oam.
on has hue of 10YR,
to 4. Mottles, if present,
e from few to many.
commonly are on
worm casts. Texture is
ower part of the Bt
of 4 or 5, and chroma of
to 6, and chroma of 4
shades of red, or it is
ow, or red. Texture is
content of clay in the
upper 20 inches of the
The 2Bt horizon
of brown, red, yellow, or
or 2.5Y hue, value of 4
es are in shades of
n and black concretions
clay or silty clay loam.
ades of yellow, brown,
s are few to many, and
ge from few to many.

s of deep, moderately
a mantle of silty
ny material. These soils
nds. These Providence
s range from 2 to 15

bangular blocky structure; friable; few fine
films on faces of peds; sand grains
d bridged with clay; very strongly acid;
ooth boundary.
nches; mottled yellowish brown (10YR
nish yellow (10YR 6/6), and light
ray (10YR 6/2) clay loam; weak coarse
tructure parting to moderate medium
blocky structure; slightly firm and brittle;
n part, or in about 10 percent of the
fine roots; few fine pores; patchy clay
ces of peds; sand grains coated and
th clay; very strongly acid.

s of the solum is more than 60 inches.
y strongly acid or strongly acid throughout
s where the surface layer has been limed.
horizon has hue of 10YR, value of 3 to 6,
1 to 4; hue of 2.5Y or 5Y, value of 5 or 6,
3 to 4.
s have an E horizon that has hue of
5 or 6, and chroma of 2 to 4. Texture is
ndy loam.
on has hue of 7.5YR, 10YR, or to 2.5Y,
, and chroma of 4 to 8. Mottles of chroma
few or common. Texture is fine sandy
sandy clay loam. The Btx horizon is
des of brown, gray, red, and yellow.
n, sandy clay loam, or clay loam. In some
wer part of the Btx horizon is silty clay
) to 20 percent of the mass of the lower
zon is brittle and compact and in the
art, the root zone is restricted. The
in the particle-size control section, the
s of the Bt horizon, ranges from 18 to 35
ne content of silt ranges from 25 to 50
n, black, or red concretions are few or

Series

ah series consists of deep, moderately
oils that formed in loamy material. These
lands and stream terraces. Savannah
agipan. The slopes range from 2 to 8
oils of the Savannah series are fine-loamy,
nic Typic Fragiudults.
oils are associated with Ora, Pelahatchie,
Smithdale soils. Ora soils are on uplands
ately well drained. These soils have a
e Bt horizon, Ora soils have hue of 5YR or
is more red than 5YR. Pelahatchie soils
s and are moderately well drained. These
ne-silty control section. Quitman soils are
d stream terraces and are moderately well
e soils do not have a fragipan. Smithdale

clay films on faces of peds; few black concretions; very strongly acid.

The thickness of the solum ranges from 50 to more than 80 inches. Depth to the fragipan ranges from 16 to 38 inches. Reaction is very strongly acid or strongly acid throughout except in areas where the surface layer has been limed. In areas that have not been cultivated, the A horizon can be 1 to 4 inches thick, and it has hue of 10YR, value of 3, and chroma of 1 or 2.

The Ap and E horizons have hue of 10YR, value of 4 or 5, and chroma of 2 to 4. Texture of the E horizon is loam or fine sandy loam.

The Bt horizon has hue of 7.5YR or 10YR, value of 5, and chroma of 4, 6, or 8. Texture is sandy clay loam, clay loam, or loam. The contents of clay in the Bt horizon ranges from 18 to 32 percent, and the content of silt ranges from 20 to 50 percent. The Bx horizon is mottled in shades of yellow, brown, red, and gray, or it has hue of 10YR, value of 5, and chroma of 4 to 8. Mottles are in shades of gray. This horizon is very firm and brittle, when moist, in more than 60 percent of the volume. Texture is sandy clay loam, clay loam, or loam.

Smithdale Series

The Smithdale series consists of deep, well drained soils that formed in loamy marine sediment. These soils are on hilly uplands. The slopes range from 5 to 40 percent. The soils of the Smithdale series are fine-loamy, siliceous, thermic Typic Hapludults.

Smithdale soils are associated with Kisatchie, Maben, Ora, Providence, and Savannah soils. Kisatchie soils are on uplands and are well drained, but they have a fine control section and are underlain by sandstone or siltstone at a depth of 20 to 40 inches. Maben soils are well drained and are on uplands, but they have a fine control section. Ora soils are on uplands, but they are moderately well drained and have a fragipan. Providence and Savannah soils are on uplands and stream terraces. These soils are moderately well drained and have a fragipan. In addition, Providence soils have a fine-silty control section.

Typical pedon of Smithdale fine sandy loam, 8 to 17 percent slopes, eroded; in a wooded area, 2.6 miles north of Pelahatchie along a local road, 0.3 mile east along intersecting local road, 100 feet north of county road, NE1/4SW1/4 sec. 10, T. 6 N., R. 5 E.

Ap—0 to 4 inches; dark grayish brown (10YR 4/2) fine sandy loam; few fine distinct light yellowish brown (10YR 6/4) mottles; weak fine granular structure; very friable; many fine and medium roots; very strongly acid; clear smooth boundary.

E—4 to 10 inches; yellowish brown (10YR 5/4) fine sandy loam; few fine distinct dark grayish brown (10YR 4/2) mottles; weak fine granular structure;

ese soils are on
to 12 percent. The
-silty, mixed, thermic

h Falkner, Kipling,
er soils are on uplands
somewhat poorly
rizon that has hue of
low than 10YR. Kipling
somewhat poorly
control section.
it they are well drained.
one or sandstone.
they are well drained.
ection.
am, 2 to 5 percent
ass, about 11 miles
th of Mississippi State
3, T. 4 N., R. 4 E.

rown (10YR 4/2) silt
icture; friable; many fine
oth boundary.
n (10YR 5/4) silt loam
and; common pockets
/n (10YR 6/3) mottles;
ocky structure; friable;
acid; clear smooth

d (5YR 5/6) silty clay
angular blocky
oots; discontinuous clay
dual smooth boundary.
wn (7.5YR 5/6) silty
ict red (2.5YR 5/8) and
sh gray (10YR 6/2)
ubangular blocky
oots; discontinuous clay
pale brown (10YR 6/3)
rongly acid; gradual

trong brown (7.5YR
YR 6/2) and brown
erate medium
firm; thick discontinuous
very strongly acid;

grayish brown (10YR
YR 6/2), yellowish
(2.5YR 4/6) clay;
ar blocky structure;
thick discontinuous clay
medium concretions; few
y acid; gradual wavy

rown (10YR 5/2) clay;
4/6) mottles; moderate

(10YR 5/4) silt
d light brownish
e fine and medium
e; common fine
n patchy clay films;
/ acid; gradual

(10YR 5/4) silt
ght brownish gray
faint brownish
medium
g to weak fine
roots; common
ms; few fine
adual wavy

gray (10YR 6/2) silt
ellowish brown
nd pale brown
prismatic structure
ar blocky structure;
ts; common fine
; very strongly

/4) silt loam (B);
) and light
1 inch to 2 inches
weak coarse
lerate medium
le; slightly brittle in
roots; common fine
brown concretions;
undary.
(10YR 5/3) and
lt loam; weak
to moderate
ure; friable; few fine
of some peds; few
ngly acid; gradual

ellowish brown
10YR 6/2) and pale
coarse prismatic
subangular blocky
ray silt coatings on
chy clay films;

from 60 to more
very strongly acid
the surface layer

7.5YR, value of 4

of 10YR, value of
of chroma of 2 or
Bt2 horizons are

listinct light brownish gray (10YR
medium subangular blocky
mon fine black concretions;
; very strongly acid; clear wavy

light brownish gray (2.5Y 6/2)
medium distinct dark yellowish
and yellowish brown (10YR 5/6)
se prismatic structure parting to
ngular blocky structure; firm,
common fine and medium black
on fine roots; few stress surfaces
ew clay films in pores; very
ual wavy boundary.
light brownish gray (2.5Y 6/2)
medium distinct yellowish brown
s; weak coarse prismatic structure
dium subangular blocky structure;
stic; few fine roots; common fine
few pressure faces on peds; very
ual wavy boundary.
rayish brown (2.5Y 5/2) silty clay;
listinct dark yellowish brown
llowish brown (10YR 5/6)
se prismatic structure parting to
ngular structure; sticky and
ts; few fine black concretions;
on peds; very strongly acid.

solum is more than 60 inches.
y acid or strongly acid throughout
he surface layer has been limed.
ns have hue of 10YR, value of 4
r 3; or hue of 2.5Y, value of 4 or

B horizon has hue of 10YR,
oma of 2 to 4; or hue of 2.5Y,
oma of 2 to 4. Mottles, if present,
des of gray, brown, and yellow.
horizon has hue of 10YR, value
f 1 or 2; or hue of 2.5Y, value of
. Mottles are few to many in
ellow, or gray. Texture of the B
n, clay loam, silty clay, or clay.
he 10- to 40-inch control section
ercent. A few patches of oriented
racks. Black and brown
common throughout.

Formation of the Soils

In this section, the factors of soil formation are presented as they relate to the soils of Rankin County. In addition, the processes of soil formation are described.

Factors of Soil Formation

Soil is the product of the combined effects of parent material, climate, living organisms, relief, and time *(5)*. The characteristics of a soil at any place depend upon a combination of these five environmental factors at that particular place. In many places, however, one or two of the factors are dominant and fix most of the properties of a particular soil.

Parent Material

Parent material, the unconsolidated mass in which a soil forms, largely determines the chemical and mineralogical composition of a soil. The parent materials of the soils in Rankin County are sediments of marine origin, of loess, and of alluvium.

According to most soil scientists, loess is mostly glacial rock flour, which was derived from the melting glacial ice that was carried southward and deposited on floodplains by the Mississippi River. It was later redeposited by wind on the older geologic formations of marine origin.

Some of the soils in Rankin County formed in more than one kind of parent material. In places where the overlying layer of loess is thin, the upper horizons formed in weathered loess and the lower horizons formed in loamy material of marine origin. Providence soils formed in this kind of parent material.

The parent material in the steeper areas of the county is dominantly sediment of marine origin. This sediment consists of mixed particles of sand, silt, and clay. Smithdale soils formed in this kind of parent material.

The soils along the streams in the county formed in alluvium that washed down from the surrounding uplands and was redeposited by the streams on the flood plains. The alluvial particles are dominantly silt mixed with sand and clay. Oaklimeter soils formed in this kind of parent material.

Climate

Climate as a genetic factor affects the physical, chemical, and biological relationships of the soil primarily through the influence of precipitation and temperature. Water dissolves minerals, supports biological activity, and transports mineral and organic residue through the soil profile. The amount of water that percolates through the soil over a broad area depends mainly on the rainfall, the relative humidity, and the length of the frost-free period. The amount of downward percolation is also affected by physiographic position and soil permeability. In Rankin County rainfall is abundant, averaging about 55 inches a year. Rainfall is slightly higher in spring and summer than in fall and winter.

The warm temperature influences the kind and growth of organisms and also affects the speed of physical and chemical reactions in the soil. The climate of Rankin County is warm and moist and presumedly is similar to the climate that existed when the soils formed. Freezing and thawing have very little effect on weathering and on the soil-forming processes.

Living Organisms

Micro-organisms, plants, earthworms, and all other organisms that live on and in the soil have an important effect on the formation of the soil. Bacteria, fungi, and other micro-organisms help in the weathering of rock and in decomposing the organic matter. Larger plants alter the soil climate in small areas (soil microclimate), supply organic matter, and transfer elements from the subsoil to the surface layer.

The kinds and numbers of plants and animals that live on and in the soil are determined mainly by climate. To a varying degree, this can also be determined by parent material, relief, and age of the soil.

Not much is known of the fungi and micro-organisms in the soils of Rankin County except that they mostly are in the top few inches. Earthworms and other small invertebrates are continually mixing the soil in the surface layer, where they are more active than in the other layers. Mixing of the soil materials by rodents is not of much consequence in this county.

Except on the bottom land, the native vegetation in Rankin County is chiefly oak, hickory, and pine. On the better drained areas of bottom land, the trees are

lowland hardwoods, mainly yellow-poplar, sweetgum, ash, and oak. Cypress, birch, blackgum, beech, and water-tolerant oak are mainly in the wetter areas of the bottom land.

Relief

The relief in Rankin County ranges from nearly level on the flood plains to steep on the uplands. Relief, or lay of the land, affects the drainage and rate of runoff. Thus, relief influences the moisture conditions in soils and the erosion that occurs on the land surface. The rate of runoff is greater on steep slopes than it is on the gentle slopes and level areas; therefore, the amount of water that moves through the soil during development depends partly on the relief. In level areas and in depressions, the soils are likely to be gray and wet.

Fragipan formation is also associated with relief and drainage. These compact, brittle horizons have the strongest expressions on level to gently sloping topography and under somewhat poorly drained to moderately well drained conditions. The Ora, Providence, and Savannah soils have a fragipan. Fragipans govern the depth that roots, air, and water can penetrate the soils, and they also govern the permeability and wetness of the soils. When compared to other factors of soil development, relief and drainage are more local in scope. Their influence on the soil can be observed on small farms. Relief, or lay of land, is important in land use and in crop productivity.

Time

A long time generally is required for the formation of a soil that has distinct horizons. The difference in the length of time that parent material has been in place is commonly reflected in the degree of development of the soil profile.

The soils in Rankin County range from young to old. The young soils have a weakly developed profile, and the older soils have a well-defined horizon.

Arkabutla soils are examples of younger soils that have weakly-defined horizons. These soils formed in silty materials on the flood plains. Examples of older soils on uplands are those of the Smithdale series. Smithdale soils are loamy textured and have well-defined horizons.

Processes of Horizon Differentiation

Several processes were involved in the formation of horizons in the soils of Rankin County. These processes are the accumulation of organic matter, the leaching of calcium carbonates and bases, the reduction and transfer of iron and the formation and translocation of silicate clay minerals. In most soils, more than one of these processes have been active in the development of horizons.

The accumulation of organic matter in the upper part of the profile results in the formation of an A horizon. The content of organic matter in the soils in Rankin County is low.

Carbonates and bases have been leached from nearly all of the soils. This leaching has contributed to the development of horizons. Soil scientists generally agree that leaching of bases from the upper horizons of a soil commonly precedes the translocation of silicate clay minerals. Most of the soils in this county are moderately to strongly leached.

The reduction and transfer of iron, a process called gleying, is evident in the poorly drained soils of the county. This gleying is indicated by the gray color of the horizons below the surface layer. Segregation of iron is indicated in some horizons by reddish brown mottles and concretions.

In some soils in Rankin County, the translocations of clay minerals has contributed to horizon development. The eluviated E horizon that is above the B horizon contains less clay than the B horizon and generally is lighter in color. The B horizon commonly has accumulations of clay or clay films in pores and on the ped surfaces. These soils were probably leached of carbonates and soluble salts to a considerable extent before translocation of silicate clays took place.

The leaching of bases and subsequent translocation of silicate clay are among the more important processes of horizon differentiation that have taken place in the soils of Rankin County. In the Providence soils and in other soils in the county, translocated silicate clays have accumulated in the B horizon in the form of clay films.

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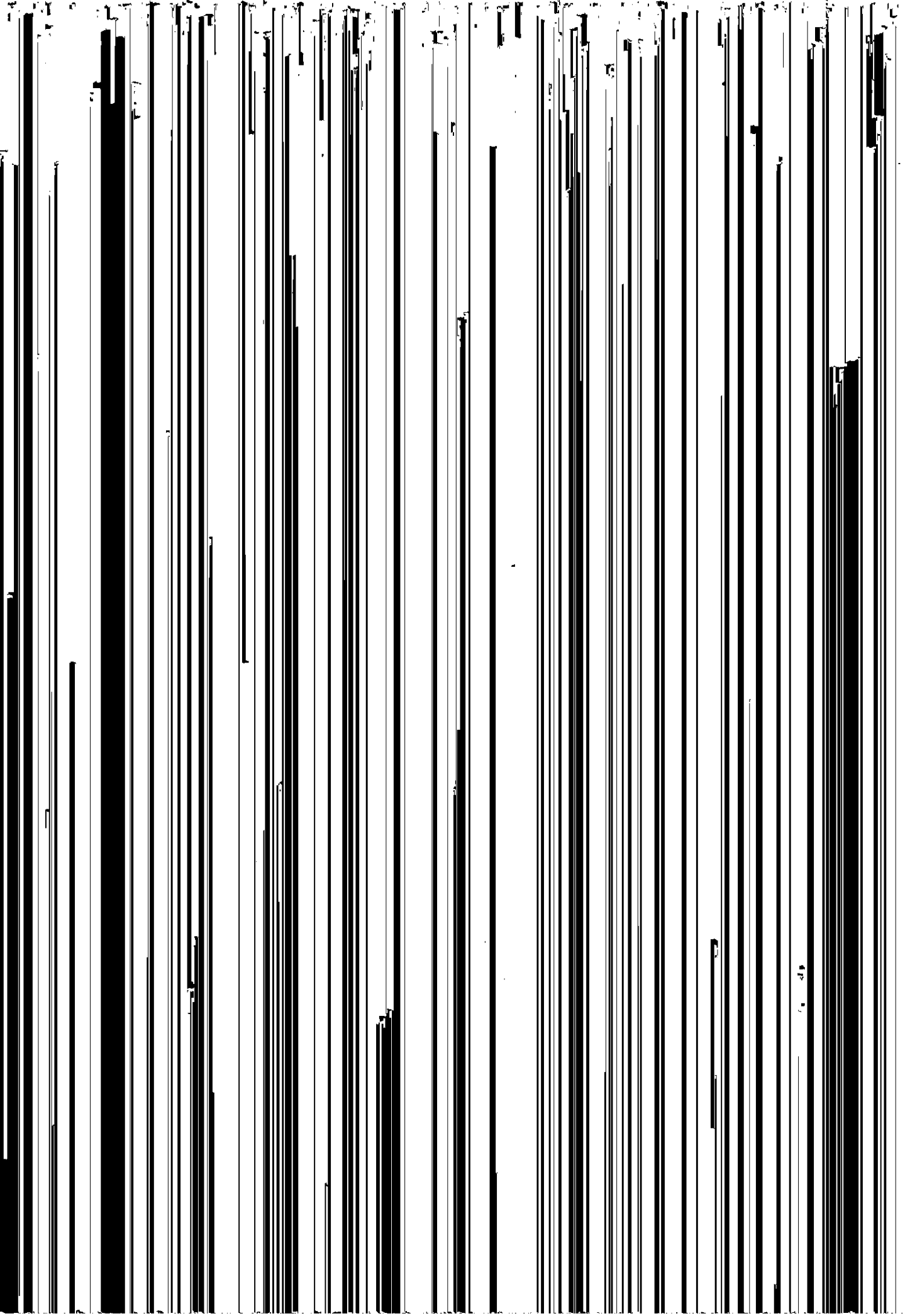

el of the soil and the ease with
crushed by the fingers. Terms
scribe consistence are—
t when dry or moist; does not
ss.
, crushes easily under gentle
mb and forefinger and can be
a lump.
rushes under moderate
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noticeable.
eadily deformed by moderate
ressed into a lump; will form a
tween thumb and forefinger.
dheres to other material and
what and pull apart rather than
material.
derately resistant to pressure;
fficulty between thumb and

aks into powder or individual
ht pressure.
le affected by moistening.
Growing crops in strips that
rips of grass or close-growing
with strips of clean-tilled crops

t of the soil on which
l. The thickness varies among
but for many it is that part of
en depths of 10 inches and 40

rrosion to uncoated steel or
ete.
ing crop grown primarily to
he soil between periods of
n, or a crop grown between
hards and vineyards.
). The walls of excavations
ugh.
avily grazed climax range
are the most palatable, they
troyed by overgrazing.
ning grazing or resting
scribed period.
. Bedrock is too near the
ied use.
errace). A ridge of earth,
uilt to protect downslope areas
m its natural course.
Refers to the frequency and
saturation or partial saturation
as opposed to altered
mmonly the result of artificial
but may be caused by the
channels or the blocking of

drainage outlets. Seven classes of natural soil drainage are recognized:

Excessively drained.—Water is removed from the soil very rapidly. Excessively drained soils are commonly very coarse textured, rocky, or shallow. Some are steep. All are free of the mottling related to wetness.

Somewhat excessively drained.—Water is removed from the soil rapidly. Many somewhat excessively drained soils are sandy and rapidly pervious. Some are shallow. Some are so steep that much of the water they receive is lost as runoff. All are free of the mottling related to wetness.

Well drained.—Water is removed from the soil readily, but not rapidly. It is available to plants throughout most of the growing season, and wetness does not inhibit growth of roots for significant periods during most growing seasons. Well drained soils are commonly medium textured. They are mainly free of mottling.

Moderately well drained.—Water is removed from the soil somewhat slowly during some periods. Moderately well drained soils are wet for only a short time during the growing season, but periodically they are wet long enough that most mesophytic crops are affected. They commonly have a slowly pervious layer within or directly below the solum, or periodically receive high rainfall, or both.

Somewhat poorly drained.—Water is removed slowly enough that the soil is wet for significant periods during the growing season. Wetness markedly restricts the growth of mesophytic crops unless artificial drainage is provided. Somewhat poorly drained soils commonly have a slowly pervious layer, a high water table, additional water from seepage, nearly continuous rainfall, or a combination of these.

Poorly drained.—Water is removed so slowly that the soil is saturated periodically during the growing season or remains wet for long periods. Free water is commonly at or near the surface for long enough during the growing season that most mesophytic crops cannot be grown unless the soil is artificially drained. The soil is not continuously saturated in layers directly below plow depth. Poor drainage results from a high water table, a slowly pervious layer within the profile, seepage, nearly continuous rainfall, or a combination of these.

Very poorly drained.—Water is removed from the soil so slowly that free water remains at or on the surface during most of the growing season. Unless the soil is artificially drained, most mesophytic crops cannot be grown. Very poorly drained soils are commonly level or depressed and are frequently ponded. Yet, where rainfall is high and nearly

ion of the solum, or true
ted parent material.
under poor drainage,
of iron and other elements
colors and mottles.
ng crops in strips that
waterway.
or constructed waterway,
w, seeded to grass as
. Conducts surface water

agments of rock up to 3
5 centimeters) in diameter.
bble.
ny). A soil-improving crop
in an early stage of
urity.
er filling all the unblocked
ial below the water table.
steep sides cut by running
water ordinarily runs only
on between a gully and a
generally is an obstacle
too deep to be obliterated
of lesser depth and can
nary tillage.
approximately parallel to
t characteristics produced
. In the identification of soil
etter represents the major
er case letters that follow
the major horizons. An
sions is given in the *Soil*
r horizons of mineral soil

yer of fresh and decaying
ce of a mineral soil.
horizon at or near the
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ith the mineral material.
orizon, most of which was
on.
horizon in which the main
clay, iron, aluminum, or
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horizon below an O, A, or E
in part, a layer of
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B horizon also has
such as accumulation of
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structure; redder or
e in the A horizon; or a
e combined A and B
lled the solum, or true soil.
B horizon, the A horizon

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the properties
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rface.

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake in inches per hour is expressed as follows:

Less than 0.2	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high
1.75 to 2.5	high
More than 2.5	very high

Invaders. On range, plants that encroach into an area and grow after the climax vegetation has been reduced by grazing. Generally, invader plants follow disturbance of the surface.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are—

Border.—Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes, or borders.

Basin.—Water is applied rapidly to nearly level plains surrounded by levees or dikes.

Controlled flooding.—Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

Corrugation.—Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.

Drip (or trickle).—Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Furrow.—Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.

Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Subirrigation.—Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

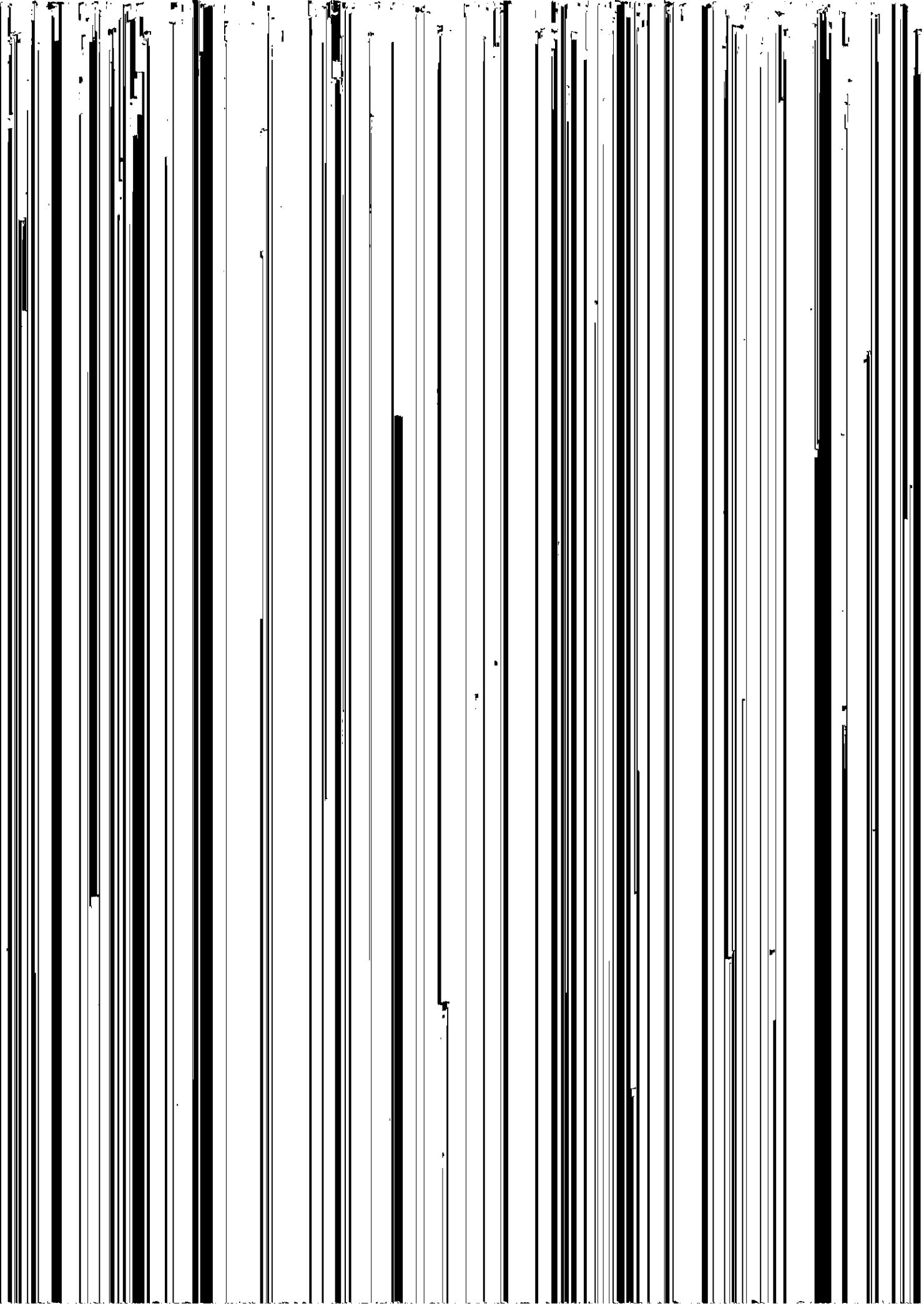
Wild flooding.—Water, released at high points, is allowed to flow onto an area without controlled distribution.

Leaching. The removal of soluble material from soil or other material by percolating water.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Loess. Fine grained material, dominantly of silt-sized particles, deposited by wind.



ve horizons that are similar in
ess, and arrangement.
k formed by the hardening of a

moval of a fairly uniform layer of
he land surface by the action of
runoff.
king of soil when dry and the
Shrinking and swelling can
ns, building foundations, and
can also damage plant roots.
f silicon and oxygen. The mineral
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individual mineral particles that
rom the upper limit of clay (0.002
wer limit of very fine sand (0.05
il textural class, soil that is 80
t and less than 12 percent clay.
rock made up of dominantly silt-

on of the quality of a forest site
t of the dominant stand at an
ge. For example, if the average
dominant and codominant trees in
d at the age of 50 years is 75
is 75 feet.
and grooved surfaces produced
g past another. In soils,
ccur at the bases of slip surfaces
es; on faces of blocks, prisms,
n swelling clayey soils, where
ange in moisture content.
f the land surface from the
age of slope is the vertical
horizontal distance, then
Thus, a slope of 20 percent is a
00 feet of horizontal distance.
is great enough that special
red to ensure satisfactory
soil for a specific use.
. The slow movement of water

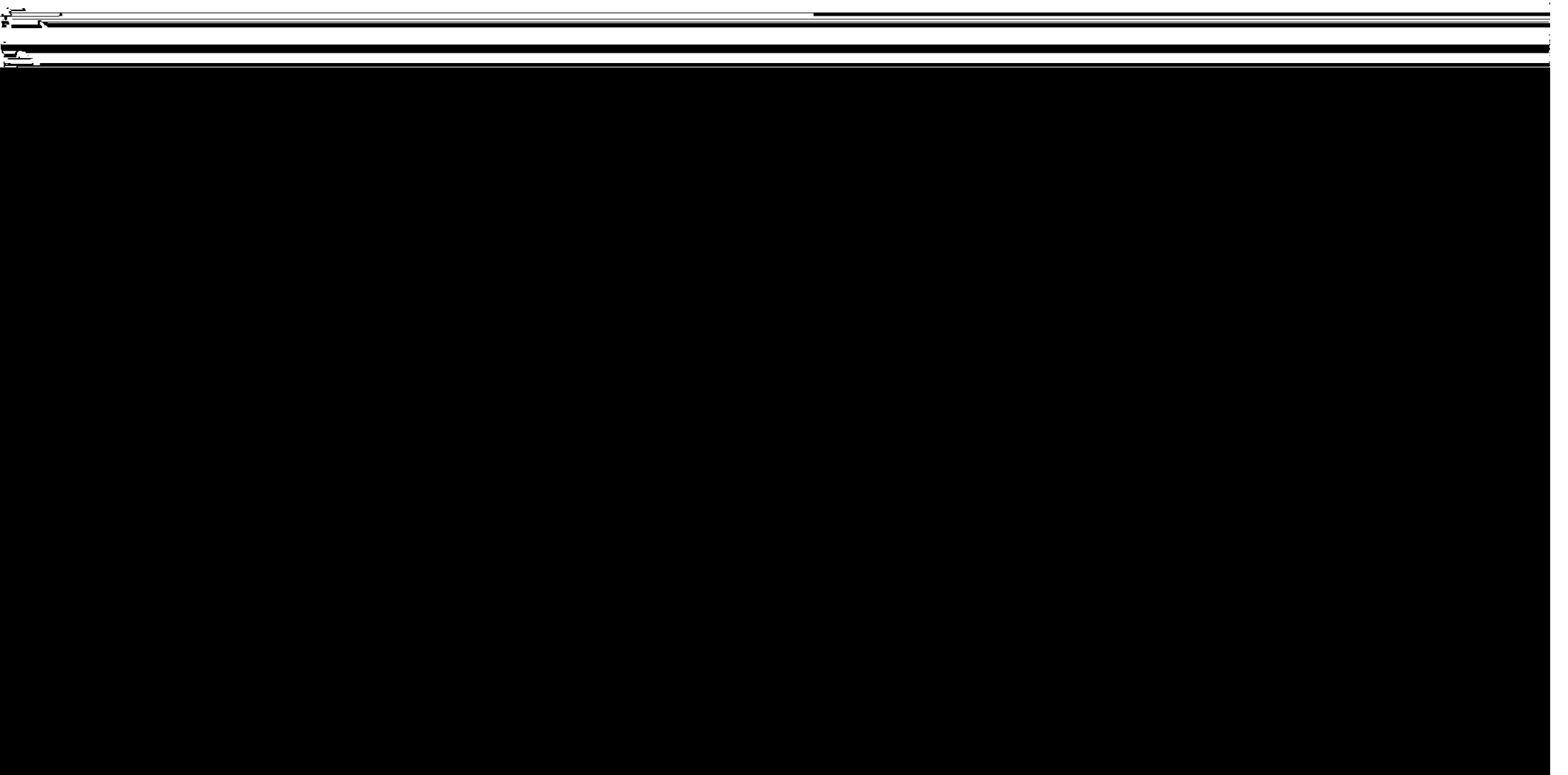
The slow filling of ponds, resulting
meability in the soil.
s). Rock fragments less than 3
eters) in diameter. Small stones
e specified use of the soil.
mensional body at the earth's
le of supporting plants and has
from the integrated effect of
natter acting on earthy parent
oned by relief over periods of

l particles less than 2 millimeters
eter and ranging between
s. The names and sizes of

tation is not enough to produce a crop every
ummer fallow is frequently practiced before
g winter grain.
yer. The soil ordinarily moved in tillage, or its
lent in uncultivated soil, ranging in depth from
) inches (10 to 25 centimeters). Frequently
ated as the "plow layer," or the "Ap horizon."
n embankment, or ridge, constructed on the
r or at a slight angle to the contour across
soils. The terrace intercepts surface runoff,
water soaks into the soil or flows slowly to a
ed outlet.
eologic). An old alluvial plain, ordinarily flat or
ting, bordering a river, a lake, or the sea.
oil. The relative proportions of sand, silt, and
rticles in a mass of soil. The basic textural
s, in order of increasing proportion of fine
es, are *sand, loamy sand, sandy loam, loam,*
m, silt, sandy clay loam, clay loam, silty clay
sandy clay, silty clay, and *clay*. The sand,
sand, and sandy loam classes may be further
by specifying "coarse," "fine," or "very

(in tables). Otherwise suitable soil material is
n for the specified use.
The physical condition of the soil as related
ge, seedbed preparation, seedling emergence,
ot penetration.
The outermost inclined surface at the base
l; part of a foot slope.
ne upper part of the soil, which is the most
ble material for plant growth. It is ordinarily
organic matter and is used to topdress
nks, lawns, and land affected by mining.
nents. Chemical elements, such as zinc,
manganese, copper, and iron, are in soils in
ely small amounts. They are essential to plant

ology). Land at a higher elevation, in general,
ne alluvial plain or stream terrace; land above
vlands along streams.
g. All physical and chemical changes
ed by atmospheric agents in rocks or other
ts at or near the earth's surface. These
es result in disintegration and decomposition
material.
d. Refers to soil material consisting of course
d particles that are well distributed over a wide
in size or diameter. Such soil normally can be
increased in density and bearing properties by
ction. This contrasts with poorly graded soil.



Tables

TABLE 1.--TEMPERATURE AND PRECIPITATION

[Based on data recorded in the period 1951-81 at Pelahatchie, Mississippi]

Month	Temperature						Precipitation				
				2 years in 10 will have--				2 years in 10 will have--			
	Average daily maximum	Average daily minimum	Average daily	Maximum temperature higher than--	Minimum temperature lower than--	Average number of growing degree days*	Average	Less than--	More than--	Average number of days with 0.10 inch or more	Average snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January----	56.6	33.5	45.1	78	7	84	5.44	2.82	7.72	8	.0
February---	62.0	36.4	49.2	82	13	124	4.83	2.80	6.64	7	.0
March------	69.8	43.3	56.6	87	21	260	6.09	3.24	8.58	7	.2
April------	78.5	52.1	65.3	89	33	459	5.41	2.37	7.98	6	.0
May--------	84.1	58.9	71.5	94	39	667	4.83	1.95	7.25	7	.0
June-------	90.0	65.4	77.7	98	49	831	3.34	1.73	4.74	6	.0
July-------	92.3	68.7	80.5	99	58	946	5.67	3.63	7.51	7	.0
August-----	91.6	67.8	79.7	99	56	921	3.60	1.69	5.24	6	.0
September--	87.3	63.2	75.3	98	43	759	3.56	1.16	5.52	5	.0
October----	79.3	50.3	64.8	92	30	459	2.72	.71	4.33	4	.0
November---	68.5	41.9	55.2	84	18	192	4.20	1.97	6.11	6	.0
December---	60.9	36.4	48.7	80	12	100	5.74	3.25	7.93	7	.0
Yearly:											
Average--	76.7	51.5	64.1	---	---	---	---	---	---	---	---
Extreme--	---	---	---	101	7	---	---	---	---	---	---
Total----	---	---	---	---	---	5,802	55.43	45.98	65.01	76	.2

* A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (50 °F).

TABLE 2.--FREEZE DATES IN SPRING AND FALL

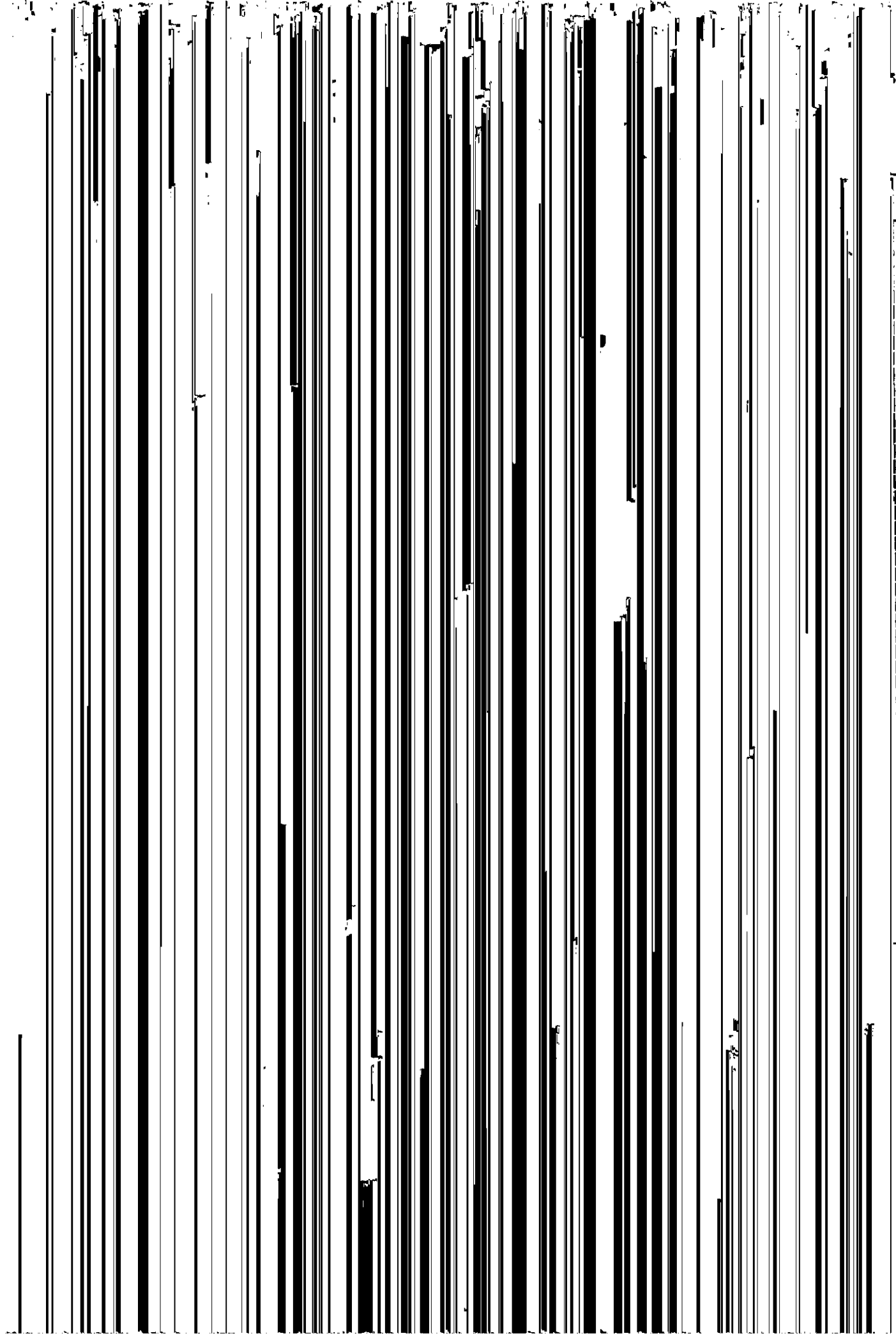
[Based on data recorded in the period 1951-81 at Pelahatchie, Mississippi]

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	March 18	March 27	April 10
2 years in 10 later than--	March 11	March 21	April 5
5 years in 10 later than--	February 26	March 10	March 27
First freezing temperature in fall:			
1 year in 10 earlier than--	November 7	October 29	October 18
2 years in 10 earlier than--	November 13	November 4	October 23
5 years in 10 earlier than--	November 26	November 13	October 31

TABLE 3.--GROWING SEASON

[Based on data recorded in the period 1951-81 at Pelahatchie, Mississippi]

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	Days	Days	Days
9 years in 10	244	221	201
8 years in 10	254	230	207
5 years in 10	273	247	217
2 years in 10	292	265	228
1 year in 10	302	274	234



Percent
4.1
3.0
2.1
1.3
2.9
1.7
2.8
0.2
0.6
0.5
1.8
0.6
3.3
0.4
2.0
2.7
0.6
1.1
0.3
4.9
4.0
1.1
0.5
0.1
3.7
4.1
4.3
1.6
0.2
3.8
1.7
0.1
0.7
1.1
9.4
7.9
3.4
7.1
3.5
1.2
0.7
2.9
100.0

TABLE 5.--PRIME FARMLAND

ls considered prime farmland are listed. Urban or built-up areas of the soils listed are not
ed prime farmland. If a soil is prime farmland only under certain conditions, the conditions
ified in parentheses after the soil name. Soils that are shown as flooded are subject to
for brief periods during the winter and early in the spring before crops are planted]

Soil name
klimeter silt loam, occasionally flooded
llsburg silt loam, occasionally flooded
rkville fine sandy loam, occasionally flooded
bo silty clay loam, occasionally flooded
haba fine sandy loam, 0 to 2 percent slopes
verett silt loam, 0 to 2 percent slopes
ppo silt loam, 0 to 2 percent slopes, occasionally flooded
yton silt loam, occasionally flooded (where drained)
itman loam, 0 to 2 percent slopes
itman loam, 2 to 5 percent slopes
ppah silt loam, 2 to 5 percent slopes, eroded
ovidence silt loam, 2 to 5 percent slopes, eroded
vannah loam, 2 to 5 percent slopes, eroded
lkner silt loam, 2 to 5 percent slopes
pling silt loam, 0 to 2 percent slopes
pling silt loam, 2 to 5 percent slopes
lahatchie silt loam, 0 to 2 percent slopes
lahatchie silt loam, 2 to 5 percent slopes

hat the

Bahiagrass
AUM*
9.0
10.0
9.0
8.5
10.0
9.0
10.0
10.0
9.0
8.5
8.0

TABLE 6.--LAND CAPABILITY CLASSES AND YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Map symbol and soil name	Land capability	Cotton lint	Corn	Soybeans	Wheat	Common bermudagrass	Improved bermudagrass	Bahiagrass
		Lbs	Bu	Bu	Bu	AUM*	AUM*	AUM*
36B**----- Kipling- Urban land	---	---	---	---	---	---	---	---
38**----- Pits-Udorthents	---	---	---	---	---	---	---	---
41B2----- Providence	IIe	700	80	35	40	---	9.5	8.5
41C2----- Providence	IIIe	650	70	30	35	---	9.0	8.0
42B**----- Providence- Urban land	---	---	---	---	---	---	---	---
48C2----- Ora	IIIe	600	70	30	35	---	8.0	8.5
48D2----- Ora	IVe	---	---	---	---	---	7.0	8.0
49B2----- Savannah	IIe	650	75	35	40	---	8.5	9.0
49C2----- Savannah	IIIe	600	70	30	35	---	8.0	9.0
50B**: Savannah-----	IIIe	600	70	30	35	---	8.0	9.0
Quitman-----	IIe	600	75	30	35	---	10.0	10.0
51B----- Falkner	IIIe	600	70	30	35	---	9.0	8.5
55A----- Kipling	IIIw	550	---	30	35	---	8.5	7.0
55B----- Kipling	IIIe	550	---	25	35	---	8.5	7.0
55C2----- Kipling	IVe	500	---	20	30	---	8.0	6.5
56A----- Pelahatchie	IIw	700	---	35	40	7.0	9.0	8.0
56B----- Pelahatchie	IIe	650	---	35	40	7.0	9.0	8.0
62F**: Smithdale-----	VIIe	---	---	---	---	---	---	---
Providence-----	VIe	---	---	---	---	---	8.5	8.0
Kisatchie-----	VIe	---	---	---	---	---	---	---
64F**: Smithdale-----	VIIe	---	---	---	---	---	---	---

See footnotes at end of table.

TABLE 6.--LAND CAPABILITY CLASSES AND YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Map symbol and soil name	Land capability	Cotton lint	Corn	Soybeans	Wheat	Common bermudagrass	Improved bermudagrass	Bahiagrass
		Lbs	Bu	Bu	Bu	AUM*	AUM*	AUM*
64F**:								
Providence	VIe	---	---	---	---	---	8.5	8.0
65D:								
Smithdale	VIe	---	---	---	---	---	8.0	7.5
Providence	VIe	---	---	---	---	---	8.5	8.0
66B**:								
Providence	IIIe	675	80	35	35	---	9.0	8.0
Tippah	IIIe	600	70	30	30	---	9.0	8.5
67B**:								
Kipling	IVe	500	---	20	30	---	8.0	6.5
Falkner	IVe	550	65	25	30	---	8.0	8.0
68D2---------- Smithdale	VIe	---	---	---	---	4.5	9.0	8.0
70F**:								
Maben	VIIe	---	---	---	---	---	---	---
Smithdale	VIIe	---	---	---	---	---	---	---

* Animal-unit-month: The amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

** See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 7.--CAPABILITY CLASSES AND SUBCLASSES

[Miscellaneous areas are excluded. Absence of an entry indicates no acreage]

Class	Total acreage	Major management concerns (Subclass)			
		Erosion (e)	Wetness (w)	Soil problem (s)	Climate (c)
		Acres	Acres	Acres	Acres
I	3,161	---	---	---	---
II	144,995	67,066	77,929	---	---
III	122,499	121,545	954	---	---
IV	96,418	51,731	44,687	---	---
V	---	---	---	---	---
VI	41,796	41,796	---	---	---
VII	40,946	40,946	---	---	---
VIII	---	---	---	---	---

						Loblolly pine	90	9	sycamore, yellow-
						Sweetgum	90	7	poplar.
						American sycamore	105	10	
						Water oak	95	6	
						Yellow-poplar	105	8	

See footnotes at end of table.

8---------- Urbo	11W	Slight	Moderate	Slight	Moderate	Moderate	Eastern cottonwood-- Cherrybark oak------ Sweetgum---------- Green ash----------	99 98 93	10 9 4	loblolly pine, sweetgum, American sycamore, yellow-poplar.
9**: Urbo----------	11W	Slight	Severe	Moderate	Moderate	Moderate	Eastern cottonwood-- Cherrybark oak------ Sweetgum---------- Green ash----------	93 108 99 98	11 10 9 4	Eastern cottonwood, loblolly pine, sweetgum, American sycamore, yellow-poplar.

See footnotes at end of table.

TABLE 8.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Map symbol and soil name	Ordination symbol	Management concerns					Potential productivity			Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Productivity class*	
9**: Arkabutla	12W	Slight	Severe	Moderate	Slight	Moderate	Cherrybark oak Eastern cottonwood Green ash Loblolly pine Nuttall oak Sweetgum Water oak	105 110 95 100 110 100 100	12 11 4 11 8 10 7	Cherrybark oak, eastern cottonwood, green ash, loblolly pine, sweetgum, American sycamore.
12A Cahaba	9A	Slight	Slight	Slight	Slight	Moderate	Loblolly pine Yellow-poplar Sweetgum	87 --- 90	9 -- 7	Loblolly pine, yellow-poplar, sweetgum.
21A Leverett	8A	Slight	Slight	Slight	Slight	Slight	Loblolly pine Cherrybark oak Sweetgum	85 85 85	8 7 6	Loblolly pine, cherrybark oak, sweetgum, yellow-poplar.
22A Tippo	6W	Slight	Moderate	Slight	Slight	Moderate	Cherrybark oak Loblolly pine Sweetgum	80 90 90	6 9 7	Cherrybark oak, green ash, loblolly pine, sweetgum, yellow-poplar.
23 Guyton	9W	Slight	Severe	Moderate	Slight	Moderate	Loblolly pine Sweetgum Green ash Southern red oak Water oak	90 --- --- --- ---	9 -- -- -- --	Loblolly pine, sweetgum.
25A, 25B Quitman	10W	Slight	Moderate	Slight	Slight	Slight	Loblolly pine Sweetgum Water oak	92 93 90	10 8 6	Loblolly pine, sweetgum, American sycamore, yellow-poplar.

See footnotes at end of table.

						Water oak----------	80	5
						White oak----------	80	5

See footnotes at end of table.

TABLE 8.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Map symbol and soil name	Ordination symbol	Management concerns					Potential productivity			Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Productivity class*	
56A, 56B--------- Pelahatchie	9C	Slight	Moderate	Slight	Slight	Moderate	Loblolly pine------- Cherrybark oak------ Shumard oak--------- Sweetgum---------- Water oak---------- White oak----------	90 90 85 90 80 80	9 8 6 7 5 6	Loblolly pine, cherrybark oak, Shumard oak, sweetgum.
62F**: Smithdale------- Providence------ Kisatchie------- 64F**: Smithdale------- Providence------ 65D**: Smithdale------- Providence------	8R 8D 6D 8R 8D 8A 8D	Moderate Slight Moderate Moderate Slight Slight Slight	Moderate Slight Moderate Moderate Slight Slight Slight	Slight Slight Moderate Slight Slight Slight Slight	Slight Moderate Moderate Slight Moderate Slight Moderate	Slight Slight Moderate Slight Slight Slight Slight	Loblolly pine------- Shortleaf pine------ Loblolly pine------- Shortleaf pine------ Sweetgum---------- Loblolly pine------- Shortleaf pine------ Loblolly pine------- Shortleaf pine------ Loblolly pine------- Shortleaf pine------ Sweetgum----------	80 69 84 64 90 65 55 80 69 84 64 90 80 69 84 64 90	8 8 8 7 7 6 5 8 8 8 7 7 8 8 8 7 7	Loblolly pine. Loblolly pine, Shumard oak, sweetgum, yellow-poplar. Loblolly pine. Loblolly pine. Loblolly pine, Shumard oak, sweetgum, yellow-poplar. Loblolly pine. Loblolly pine, Shumard oak, sweetgum, yellow-poplar.

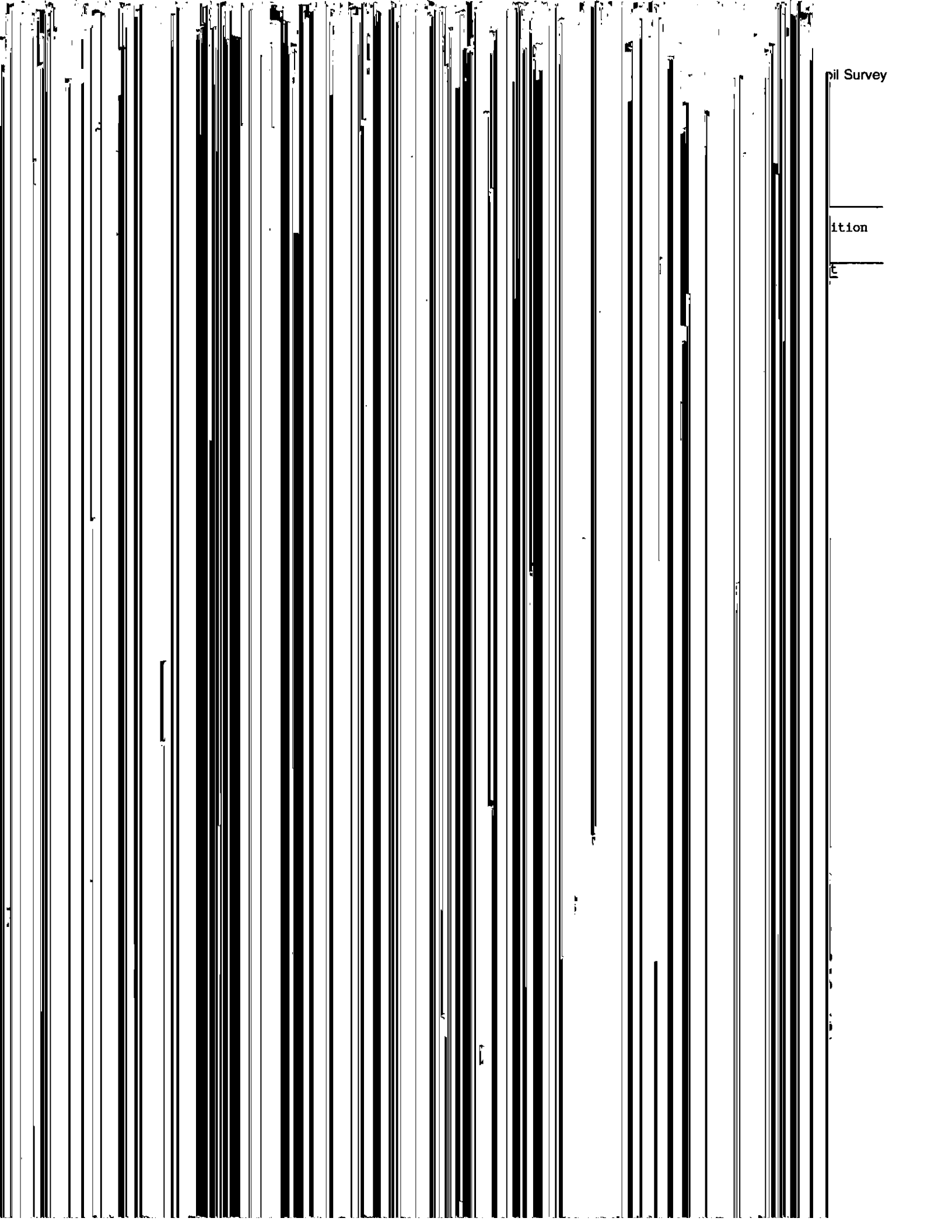
See footnotes at end of table.

TABLE 8.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Map symbol and soil name	Ordination symbol	Management concerns					Potential productivity			Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Productivity class*	
66B**:										
Providence	8D	Slight	Slight	Slight	Moderate	Slight	Loblolly pine	84	8	Loblolly pine, Shumard oak, sweetgum, yellow-poplar.
							Shortleaf pine	64	7	
							Sweetgum	90	7	
Tippah	9A	Slight	Slight	Slight	Slight	Moderate	Cherrybark oak	95	9	Cherrybark oak, Shumard oak, loblolly pine, sweetgum, yellow-poplar.
							Shumard oak	95	6	
							White oak	80	5	
							Loblolly pine	78	8	
							Sweetgum	90	7	
							Yellow-poplar	90	6	
67B**:										
Kipling	9C	Slight	Moderate	Moderate	Slight	Moderate	Loblolly pine	90	9	Loblolly pine, cherrybark oak, Shumard oak, sweetgum.
							Cherrybark oak	90	8	
							Shumard oak	85	6	
							Sweetgum	90	7	
							Water oak	80	5	
							White oak	80	5	
Falkner	8W	Slight	Moderate	Slight	Slight	Moderate	Loblolly pine	85	8	Cherrybark oak, loblolly pine, shortleaf pine, sweetgum.
							Shortleaf pine	75	8	
							Sweetgum	90	7	
68D2 Smithdale	8A	Slight	Slight	Slight	Slight	Slight	Loblolly pine	80	8	Loblolly pine.
							Shortleaf pine	69	8	
70F**:										
Maben	8C	Slight	Moderate	Moderate	Moderate	Slight	Loblolly pine	83	8	Loblolly pine, shortleaf pine.
							Shortleaf pine	73	8	
Smithdale	8R	Moderate	Moderate	Slight	Slight	Slight	Loblolly pine	80	8	Loblolly pine.
							Shortleaf pine	69	8	

* Productivity class is the yield in cubic meters per hectare per year calculated at the age of culmination of mean annual increment for fully stocked natural stands.

** See description of the map unit for composition and behavior characteristics of the map unit.


pil Survey
ition

TION--Continued

acteristic vegetation	Composition
	Pct
stem	20
la	35
rass	10
la	13
stem	21
	11
la	19
n	31
stem	25
n	31
stem	25
la	19
	19
la	36
stem	21
n	21
la	36
stem	21
n	21
	14
la	36
stem	21
n	21
	14
la	13
stem	21
	11
stem	33
	27
la	20
stem	40
grass	20
	15
stem	40
grass	20
	15
la	42
stem	21
m	21
	11
m	31
stem	25
la	19
	19

TABLE 9.--WOODLAND UNDERSTORY VEGETATION--Continued

Map symbol and soil name	Total production		Characteristic vegetation	Composition
	Kind of year	Dry weight		
		Lb/acre		Pct
64F*, 65D*:				
Smithdale	Normal	950	Longleaf uniola	42
			Pinehill bluestem	21
			Beaked panicum	21
			Panicum	11
Providence	Normal	1,600	Beaked panicum	31
			Pinehill bluestem	25
			Longleaf uniola	19
			Switchcane	19
66B*:				
Providence	Normal	1,600	Beaked panicum	31
			Pinehill bluestem	25
			Longleaf uniola	19
			Switchcane	19
Tippah	Normal	1,600	Longleaf uniola	19
			Beaked panicum	31
			Pinehill bluestem	25
67B*:				
Kipling	Normal	1,000	Pinehill bluestem	40
			Common carpetgrass	20
			Panicum	15
Falkner	Normal	1,500	Pinehill bluestem	33
			Switchcane	27
			Longleaf uniola	20
68D2 Smithdale	Normal	950	Longleaf uniola	42
			Pinehill bluestem	21
			Beaked panicum	21
			Panicum	11
70F*:				
Maben	Normal	800	Pinehill bluestem	25
			Panicum	25
			Beaked panicum	31
Smithdale	Normal	950	Longleaf uniola	42
			Pinehill bluestem	21
			Beaked panicum	21
			Panicum	11

* See description of the map unit for composition and behavior characteristics of the map unit.
** Information not available for production and vegetation.

TABLE 10.--SUITABILITY OF SOILS FOR SPECIFIED HORTICULTURAL PLANTS*

Map symbol and soil name	Grasses			Vegetables										Fruits and Nuts**						Ornamentals							
	Common bermuda-grass	St. Augus-tine	Centi-pide-grass	Toma-toes	Corn	Pota-toes	Cab-bage	Okra	Snap-beans	Lima beans	Cow-peas	Squash	Peanuts	Blue-berries	Plums	Pears	Pecans	Muscadine grape	Bunch grape	Crape-myrtle	Holly	Honey-suckle	Pyr-acantha	Yaupon	Azaleas	Camel-lias	Roses
2***: Cascilla-----	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	3	3	2	2	3	2	3	3	3
Arkabutla----	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	3	2	3	3	3
3---------- Oaklimeter	1	1	2	2	1	3	3	1	2	2	1	2	3	3	2	3	2	2	3	2	1	1	2	2	2	3	3
5---------- Gillsburg	1	2	2	2	1	3	3	1	2	2	1	2	3	3	3	3	2	3	3	3	1	1	3	2	3	3	3
6***: Oaklimeter---	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	3	3	2	1	2	2	3	3	3
Gillsburg----	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	3	3	3	3	3
7---------- Kirkville	1	1	2	2	1	3	3	1	2	2	1	2	3	3	2	3	2	2	3	2	1	1	3	2	3	3	3
8---------- Urbo	1	3	3	3	1	3	3	1	2	2	2	3	3	3	3	3	3	3	3	3	3	1	3	3	3	3	3
9***: Urbo---------	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3
Arkabutla----	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3
12A---------- Cahaba	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
17***: Tippo---------	1	2	2	2	1	3	3	1	2	2	1	2	3	3	3	3	2	3	3	2	1	1	3	2	3	3	3
Urban land.																											
21A---------- Leverett	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
22A---------- Tippo	1	2	2	2	1	3	3	1	2	2	2	2	3	3	3	3	2	3	3	2	1	1	3	2	3	3	3
23---------- Guyton	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3
25A, 25B------ Quitman	1	2	2	2	2	3	3	2	2	2	2	2	3	3	3	3	2	3	3	2	1	1	3	2	3	3	3
35B2---------- Tippah	1	1	1	1	1	2	1	1	1	1	1	1	2	2	2	2	2	2	2	1	1	1	1	1	1	1	2
35C2---------- Tippah	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	2

See footnotes at end of table.

TABLE 10.--SUITABILITY OF SOILS FOR SPECIFIED HORTICULTURAL PLANTS--Continued

Map symbol and soil name	Grasses			Vegetables										Fruits and Nuts**						Ornamentals							
	Common bermuda-grass	St. Augus-tine	Centi-pide-grass	Toma-toes	Corn	Pota-toes	Cab-bage	Okra	Snap-beans	Lima beans	Cow-peas	Squash	Peanuts	Blue-berries	Plums	Pears	Pecans	Musca-dine grape	Bunch grape	Crape-myrtle	Holly	Honey-suckle	Pyr-acantha	Yaupon	Azaleas	Camel-lias	Roses
35D2---------- Tippah	1	2	2	3	3	3	3	3	3	3	3	3	3	2	2	2	2	2	2	1	1	1	1	1	1	1	2
36B***: Kipling------	1	2	2	2	3	3	3	3	3	3	3	3	3	3	3	2	2	2	2	3	2	1	2	2	3	3	3
Urban land.																											
38***: Pits.																											
Udorthents.																											
41B2---------- Providence	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	1	1	1	1	1	1	1	2
41C2---------- Providence	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	2
42B***: Providence---	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	1	1	1	1	1	1	2
Urban land.																											
48B2---------- Ora	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	1	1	1	1	1	1	2
48C2---------- Ora	1	1	1	2	2	2	2	2	2	2	1	1	2	2	2	2	2	2	2	2	1	1	1	1	1	1	2
48D2---------- Ora	1	1	1	3	3	3	3	3	3	3	3	3	3	3	2	2	2	2	2	2	1	1	1	1	1	1	2
49B2---------- Savannah	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	3	1	1	1	1	1	1	2
49C2---------- Savannah	1	1	1	2	2	2	2	2	2	2	1	1	2	2	2	2	2	2	2	2	1	1	1	1	1	1	2
50B***: Savannah------	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	1	1	1	1	1	1	2
Quitman------	1	1	1	2	1	2	2	1	1	1	1	2	2	2	2	2	2	2	3	2	1	1	2	1	2	3	2
51B---------- Falkner	1	2	2	2	2	2	3	2	2	2	2	2	3	3	3	3	2	2	3	3	2	1	2	2	3	3	3
55A, 55B------ Kipling	2	2	2	3	2	3	3	2	2	2	2	2	3	3	3	3	2	3	3	3	2	1	2	2	3	3	3
55C2---------- Kipling	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	2	2	3	3	3

See footnotes at end of table.

Providence---	1	1	1	1	1	2	1	1	1	1	1	1	2	2	2	2	2	2	2	1	1	1	1	1	1	1	2
66B***:																											
Providence---	1	1	1	1	1	2	1	1	1	1	1	1	2	2	2	2	2	2	2	1	1	1	1	1	1	1	2
Tippah-------	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	1	1	1	1	1	1	1	2
67B***:																											
Kipling------	2	2	2	2	3	2	3	3	2	2	2	3	3	3	3	3	2	3	3	3	2	1	2	2	2	2	3
Falkner------	2	2	2	2	3	2	3	3	2	2	2	3	3	3	3	3	2	3	3	3	2	1	2	2	2	2	3
68D----------	1	1	1	3	3	3	3	3	3	3	3	3	3	3	3	1	1	1	1	2	1	1	1	1	1	1	2
Smithdale																											
70F***:																											
Maben--------	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	2	2	3	2	2	2	2	2	2	3
Smithdale----	1	1	1	3	3	3	3	3	3	3	3	3	3	3	3	1	1	1	1	2	1	1	1	1	1	1	2

* The numeral 1 indicates that the soil is well suited to the specified plant.
The numeral 2 indicates that the soil is suited to the specified plant.
The numeral 3 indicates that the soil is poorly suited to the specified plant.
** Recent releases that are resistant to Pierce's disease.
*** See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 11.--RECREATIONAL DEVELOPMENT

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated]

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
2*: Cascilla	Severe: flooding.	Moderate: flooding.	Severe: flooding.	Moderate: flooding.	Severe: flooding.
Arkabutla	Severe: flooding, wetness.	Moderate: flooding, wetness.	Severe: flooding, wetness.	Moderate: flooding, wetness.	Severe: flooding, wetness.
3--- Oaklimeter	Severe: flooding.	Moderate: wetness.	Moderate: wetness, flooding.	Moderate: wetness.	Moderate: wetness, flooding.
5--- Gillsburg	Severe: flooding, wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness, flooding.
6*: Oaklimeter	Severe: flooding.	Moderate: flooding, wetness.	Severe: flooding.	Moderate: flooding, wetness.	Severe: flooding.
Gillsburg	Severe: flooding, wetness.	Moderate: flooding, wetness.	Severe: wetness, flooding.	Moderate: flooding, wetness.	Severe: flooding.
7--- Kirkville	Severe: flooding.	Moderate: wetness.	Moderate: wetness, flooding.	Moderate: wetness.	Moderate: wetness, flooding.
8--- Urbo	Severe: flooding, wetness, percs slowly.	Severe: percs slowly.	Severe: wetness.	Moderate: wetness.	Moderate: wetness, flooding.
9*: Urbo	Severe: flooding, wetness, percs slowly.	Severe: percs slowly.	Severe: wetness, flooding.	Moderate: wetness, flooding.	Severe: flooding.
Arkabutla	Severe: flooding, wetness.	Moderate: flooding, wetness.	Severe: flooding, wetness.	Moderate: flooding, wetness.	Severe: flooding, wetness.
12A--- Cahaba	Severe: flooding.	Slight---	Slight---	Slight---	Slight.
17*: Tippo	Severe: flooding.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.
Urban land.					
21A--- Leverett	Slight---	Slight---	Slight---	Slight---	Slight.

See footnote at end of table.

AL DEVELOPMENT--Continued

eas	Playgrounds	Paths and trails	Golf fairways
	Moderate: wetness, flooding.	Moderate: wetness.	Moderate: wetness, flooding.
	Severe: wetness.	Severe: wetness, erodes easily.	Severe: wetness.
ly.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.
ly.	Moderate: slope, wetness.	Moderate: wetness.	Moderate: wetness.
ly.	Moderate: slope, wetness, percs slowly.	Slight----------	Slight.
ly.	Severe: slope.	Slight----------	Slight.
ly.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
ly.	Severe: slope.	Moderate: wetness.	Moderate: wetness.
ly.	Moderate: slope, wetness, percs slowly.	Severe: erodes easily.	Moderate: wetness.
ly.	Severe: slope.	Severe: erodes easily.	Moderate: wetness.
ly.	Severe: slope.	Severe: erodes easily.	Moderate: wetness.
ly.	Severe: slope.	Slight----------	Moderate: droughty.

ATIONAL DEVELOPMENT--Continued

ıic areas	Playgrounds	Paths and trails	Golf fairways
ıte: e, ess, s slowly.	Severe: slope.	Slight----------	Moderate: droughty, slope.
ıte: ess, s slowly.	Moderate: slope, wetness, percs slowly.	Moderate: wetness.	Moderate: wetness.
ıte: ess, s slowly.	Severe: slope.	Moderate: wetness.	Moderate: wetness.
ate: ess, s slowly.	Severe: slope.	Moderate: wetness.	Moderate: wetness.
ate: ess, s slowly.	Moderate: slope, wetness.	Moderate: wetness.	Moderate: wetness.
ate: ess, s slowly.	Moderate: slope, wetness, percs slowly.	Severe: erodes easily.	Moderate: wetness.
ate: ess, s slowly.	Moderate: wetness, percs slowly.	Moderate: wetness.	Moderate: wetness.
ate: ess, s slowly.	Moderate: slope, wetness, percs slowly.	Moderate: wetness.	Moderate: wetness.
ate: ess, s slowly.	Severe: slope.	Moderate: wetness.	Moderate: wetness.
ate: ess, s slowly.	Moderate: wetness, percs slowly.	Moderate: wetness.	Moderate: wetness.
ate: ess, s slowly.	Moderate: slope, wetness, percs slowly.	Moderate: wetness.	Moderate: wetness.
e: e.	Severe: slope.	Severe: slope.	Severe: slope.
ate: e, ess, s slowly.	Severe: slope.	Severe: erodes easily.	Moderate: wetness, slope.

TABLE 11.--RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
62F*: Kisatchie	Severe: slope, percs slowly.	Severe: slope, percs slowly.	Severe: slope, percs slowly.	Severe: slope, erodes easily.	Severe: slope.
64F*: Smithdale	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
Providence	Moderate: slope, wetness, percs slowly.	Moderate: slope, wetness, percs slowly.	Severe: slope.	Severe: erodes easily.	Moderate: wetness, slope.
65D*: Smithdale	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight	Moderate: slope.
Providence	Moderate: slope, wetness, percs slowly.	Moderate: slope, wetness, percs slowly.	Severe: slope.	Severe: erodes easily.	Moderate: wetness, slope.
66B*: Providence	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Severe: slope.	Severe: erodes easily.	Moderate: wetness.
Tippah	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Severe: slope.	Slight	Slight.
67B*: Kipling	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Severe: slope.	Moderate: wetness.	Moderate: wetness.
Falkner	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Severe: slope.	Severe: erodes easily.	Moderate: wetness.
68D2 Smithdale	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight	Moderate: slope.
70F*: Maben	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily, slope.	Severe: slope.
Smithdale	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 12.--WILDLIFE HABITAT

finitions of "good," "fair," "poor," and "very poor." Absence of an entry indicates that is not rated]

	Potential for habitat elements								Potential as habitat for--		
d	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
----	Poor	Fair	Fair	Good	Good	Good	Poor	Very poor.	Fair	Good	Very poor.
----	Poor	Fair	Fair	Good	Good	---	Fair	Fair	Fair	Good	Fair
----	Good	Good	Good	Good	Poor	---	Poor	Poor	Good	Good	Poor
----	Fair	Good	Good	Good	---	---	Fair	Fair	Good	Good	Fair
----	Poor	Fair	Good	Good	Poor	---	Poor	Poor	Fair	Good	Poor
----	Poor	Fair	Fair	Good	---	---	Fair	Fair	Fair	Good	Fair
----	Good	Good	Good	Good	---	---	Poor	Poor	Good	Good	Poor
----	Fair	Good	Fair	Good	---	Good	Good	Good	Fair	Good	Good
----	Poor	Fair	Fair	Good	---	Fair	Fair	Fair	Fair	Fair	Fair
----	Poor	Fair	Fair	Good	Good	---	Fair	Fair	Fair	Good	Fair
----	Good	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
----	Fair	Good	Good	Good	Good	---	Fair	Fair	Good	Good	Fair
----	Good	Good	Good	Good	---	---	Poor	Poor	Good	Good	Poor
----	Fair	Good	Good	Good	Good	---	Fair	Fair	Good	Good	Fair
----	Fair	Fair	Fair	Fair	---	---	Good	Good	Fair	Fair	Good
----	Good	Good	Good	Good	---	Good	Fair	Poor	Good	Good	Poor
----	Good	Good	Good	Good	---	Good	Poor	Very poor.	Good	Good	Very poor.
----	Good	Good	Good	Good	Good	---	Poor	Poor	Good	Good	Poor
----	Fair	Good	Good	Good	Good	---	Very poor.	Very poor.	Good	Good	Very poor.

e at end of table.

tial as habitat for--		
and ife	Woodland wildlife	Wetland wildlife
	Good	Very poor.
	Good	Very poor.
	Good	Very poor.
	Good	Very poor.
	Good	Very poor.
	Good	Very poor.
	Good	Very poor.
	Good	Very poor.
	Good	Very poor.
	Good	Fair
	Good	Poor
	Good	Very poor.
	Good	Poor
	Good	Poor
	Good	Very poor.

TABLE 12.--WILDLIFE HABITAT--Continued

Map symbol and soil name	Potential for habitat elements								Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
62F*:											
Providence	Fair	Good	Good	Good	Good	---	Poor	Very poor.	Good	Good	Very poor.
Kisatchie	Very poor.	Poor	Fair	---	Fair	---	Very poor.	Very poor.	Poor	Fair	Very poor.
64F*:											
Smithdale	Poor	Fair	Good	Good	Good	---	Very poor.	Very poor.	Fair	Good	Very poor.
Providence	Fair	Good	Good	Good	Good	---	Poor	Very poor.	Good	Good	Very poor.
65D*:											
Smithdale	Fair	Good	Good	Good	Good	---	Very poor.	Very poor.	Good	Good	Very poor.
Providence	Fair	Good	Good	Good	Good	---	Poor	Very poor.	Good	Good	Very poor.
66B*:											
Providence	Fair	Good	Good	Good	Good	---	Poor	Very poor.	Good	Good	Very poor.
Tippah	Fair	Good	Good	Good	Good	---	Very poor.	Very poor.	Good	Good	Very poor.
67B*:											
Kipling	Fair	Good	Good	Good	---	---	Very poor.	Very poor.	Good	Good	Very poor.
Falkner	Good	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
68D2 Smithdale	Fair	Good	Good	Good	Good	---	Very poor.	Very poor.	Good	Good	Very poor.
70F*:											
Maben	Poor	Fair	Fair	Good	Good	---	Very poor.	Very poor.	Fair	Good	Very poor.
Smithdale	Poor	Fair	Good	Good	Good	---	Very poor.	Very poor.	Fair	Good	Very poor.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 13.--BUILDING SITE DEVELOPMENT

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation]

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
2*: Cascilla	Moderate: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: low strength, flooding.	Severe: flooding.
Arkabutla	Severe: wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Severe: low strength, flooding.	Severe: flooding, wetness.
3--- Oaklimeter	Severe: wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Severe: flooding.	Moderate: wetness, flooding.
5--- Gillsburg	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding.	Moderate: wetness, flooding.
6*: Oaklimeter	Severe: wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Severe: flooding.	Severe: flooding.
Gillsburg	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding.	Severe: flooding.
7--- Kirkville	Severe: wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Severe: flooding.	Moderate: wetness, flooding.
8--- Urbo	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, flooding.	Moderate: wetness, flooding.
9*: Urbo	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, flooding.	Severe: flooding.
Arkabutla	Severe: wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Severe: low strength, flooding.	Severe: flooding, wetness.
12A--- Cahaba	Slight	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: flooding.	Slight.
17*: Tippo	Severe: wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Moderate: wetness, flooding.	Moderate: wetness.
Urban land.						
21A--- Leverett	Moderate: wetness.	Slight	Moderate: wetness.	Slight	Slight	Slight.

See footnote at end of table.

TABLE 13.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
22A---------- Tippo	Severe: wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Severe: flooding.	Moderate: wetness, flooding.
23---------- Guyton	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness, flooding.	Severe: wetness.
25A, 25B---------- Quitman	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: low strength, wetness.	Moderate: wetness.
35B2---------- Tippah	Severe: wetness.	Severe: shrink-swell.	Severe: wetness, shrink-swell.	Moderate: wetness, shrink-swell.	Severe: low strength.	Slight.
35C2---------- Tippah	Severe: wetness.	Severe: shrink-swell.	Severe: wetness, shrink-swell.	Moderate: wetness, shrink-swell, slope.	Severe: low strength.	Slight.
35D2---------- Tippah	Severe: wetness.	Severe: shrink-swell.	Severe: wetness, shrink-swell.	Severe: slope.	Severe: low strength.	Moderate: slope.
36B*: Kipling----------	Severe: wetness.	Severe: shrink-swell.	Severe: wetness, shrink-swell.	Severe: shrink-swell.	Severe: low strength, shrink-swell.	Moderate: wetness.
Urban land.						
38*: Pits.						
Udorthents.						
41B2---------- Providence	Severe: wetness.	Moderate: wetness, shrink-swell.	Severe: wetness.	Moderate: wetness, shrink-swell.	Severe: low strength.	Moderate: wetness.
41C2---------- Providence	Severe: wetness.	Moderate: wetness, shrink-swell.	Severe: wetness.	Moderate: wetness, shrink-swell, slope.	Severe: low strength.	Moderate: wetness.
42B*: Providence-------	Severe: wetness.	Moderate: wetness, shrink-swell.	Severe: wetness.	Moderate: wetness, shrink-swell, slope.	Severe: low strength.	Moderate: wetness.
Urban land.						
48C2---------- Ora	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness, slope.	Moderate: low strength, wetness.	Moderate: droughty.

See footnote at end of table.

TABLE 13.--BUILDING SITE DEVELOPMENT--Continued

and e	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
-----	Severe: wetness.	Moderate: wetness, slope.	Severe: wetness.	Severe: slope.	Moderate: low strength, wetness, slope.	Moderate: droughty, slope.
-----	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.
-----	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness, slope.	Moderate: wetness.	Moderate: wetness.
-----	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness, slope.	Moderate: wetness.	Moderate: wetness.
-----	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: low strength, wetness.	Moderate: wetness.
-----	Severe: wetness.	Severe: shrink-swell.	Severe: wetness, shrink-swell.	Severe: shrink-swell.	Severe: low strength, shrink-swell.	Moderate: wetness.
2----	Severe: wetness.	Severe: shrink-swell.	Severe: wetness, shrink-swell.	Severe: shrink-swell.	Severe: low strength, shrink-swell.	Moderate: wetness.
-----	Severe: wetness.	Severe: shrink-swell.	Severe: wetness, shrink-swell.	Severe: shrink-swell.	Severe: shrink-swell, low strength.	Moderate: wetness.
-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
-----	Severe: wetness.	Moderate: wetness, shrink-swell, slope.	Severe: wetness.	Severe: slope.	Severe: low strength.	Moderate: wetness, slope.
-----	Severe: slope, depth to rock.	Severe: shrink-swell, slope.	Severe: slope, shrink-swell.	Severe: shrink-swell, slope.	Severe: low strength, slope, shrink-swell.	Severe: slope.
-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
-----	Severe: wetness.	Moderate: wetness, shrink-swell, slope.	Severe: wetness.	Severe: slope.	Severe: low strength.	Moderate: wetness, slope.
-----	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: slope.

ote at end of table.

OPMENT--Continued

	Small commercial buildings	Local roads and streets	Lawns and landscaping
	Severe: slope.	Severe: low strength.	Moderate: wetness, slope.
	Moderate: wetness, shrink-swell, slope.	Severe: low strength.	Moderate: wetness.
11.	Moderate: wetness, shrink-swell, slope.	Severe: low strength.	Slight.
11.	Severe: shrink-swell.	Severe: low strength, shrink-swell.	Moderate: wetness.
11.	Severe: shrink-swell.	Severe: low strength, shrink-swell.	Moderate: wetness.
	Severe: slope.	Moderate: slope.	Moderate: slope.
11,	Severe: slope.	Severe: low strength, slope.	Severe: slope.
	Severe: slope.	Severe: slope.	Severe: slope.

vior characteristics of the map unit.

TABLE 14.--SANITARY FACILITIES

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "good," and other terms. Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation]

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
2*:					
Cascilla	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Good.
Arkabutla	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness.
3 Oaklimeter	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Fair: too clayey, wetness.
5 Gillsburg	Severe: flooding, wetness, percs slowly.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
6*:					
Oaklimeter	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Fair: too clayey, wetness.
Gillsburg	Severe: flooding, wetness, percs slowly.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
7 Kirkville	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Fair: wetness.
8 Urbo	Severe: flooding, wetness, percs slowly.	Severe: flooding, wetness.	Severe: flooding, wetness, too clayey.	Severe: flooding, wetness.	Poor: too clayey, hard to pack, wetness.
9*:					
Urbo	Severe: flooding, wetness, percs slowly.	Severe: flooding, wetness.	Severe: flooding, wetness, too clayey.	Severe: flooding, wetness.	Poor: too clayey, hard to pack, wetness.
Arkabutla	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness.
12A Cahaba	Moderate: flooding.	Severe: seepage, flooding.	Severe: seepage.	Moderate: flooding.	Fair: thin layer.
17*:					
Tippo	Severe: wetness.	Severe: wetness.	Severe: wetness.	Moderate: flooding, wetness.	Fair: wetness.

See footnote at end of table.

TABLE 14.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
17*: Urban land.					
21A---------- Leverett	Severe: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Fair: wetness.
22A---------- Tippo	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding.	Fair: wetness.
23---------- Guyton	Severe: flooding, wetness, percs slowly.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
25A, 25B---------- Quitman	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Moderate: wetness.	Fair: too clayey, wetness.
35B2, 35C2---------- Tippah	Severe: wetness, percs slowly.	Severe: wetness.	Severe: too clayey.	Moderate: wetness.	Poor: too clayey, hard to pack.
35D2---------- Tippah	Severe: wetness, percs slowly.	Severe: slope, wetness.	Severe: too clayey.	Moderate: wetness, slope.	Poor: too clayey, hard to pack.
36B*: Kipling---------- Urban land.	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness, too clayey.	Moderate: wetness.	Poor: too clayey, hard to pack.
38*: Pits. Udorthents.					
41B2, 41C2---------- Providence	Severe: wetness, percs slowly.	Moderate: slope.	Severe: wetness.	Moderate: wetness.	Fair: too clayey, wetness.
42B*: Providence--------- Urban land.	Severe: wetness, percs slowly.	Moderate: slope.	Severe: wetness.	Moderate: wetness.	Fair: too clayey, wetness.
48C2---------- Ora	Severe: wetness, percs slowly.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Fair: wetness.
48D2---------- Ora	Severe: wetness, percs slowly.	Severe: slope, wetness.	Moderate: wetness, slope.	Moderate: wetness, slope.	Fair: slope, wetness.
49B2, 49C2---------- Savannah	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Moderate: wetness.	Fair: too clayey, wetness.

See footnote at end of table.

TABLE 14.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
50B*:					
Savannah	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Moderate: wetness.	Fair: too clayey, wetness.
Quitman	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Moderate: wetness.	Fair: too clayey, wetness.
51B---------- Falkner	Severe: wetness, percs slowly.	Moderate: slope.	Severe: wetness, too clayey.	Moderate: wetness.	Poor: too clayey, hard to pack.
55A, 55B, 55C2 Kipling	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness, too clayey.	Moderate: wetness.	Poor: too clayey, hard to pack.
56A---------- Pelahatchie	Severe: wetness, percs slowly.	Slight	Severe: wetness, too clayey.	Moderate: wetness.	Poor: too clayey, hard to pack.
56B---------- Pelahatchie	Severe: wetness, percs slowly.	Moderate: slope.	Severe: wetness, too clayey.	Moderate: wetness.	Poor: too clayey, hard to pack.
62F*:					
Smithdale	Severe: slope.	Severe: seepage, slope.	Severe: seepage, slope.	Severe: seepage, slope.	Poor: slope.
Providence	Severe: slope, wetness, percs slowly.	Severe: slope.	Severe: wetness.	Moderate: wetness, slope.	Fair: too clayey, slope, wetness.
Kisatchie	Severe: depth to rock, slope, percs slowly.	Severe: depth to rock, slope.	Severe: depth to rock, slope, too clayey.	Severe: depth to rock, slope.	Poor: area reclaim, too clayey, hard to pack.
64F*:					
Smithdale	Severe: slope.	Severe: seepage, slope.	Severe: seepage, slope.	Severe: seepage, slope.	Poor: slope.
Providence	Severe: slope, wetness, percs slowly.	Severe: slope.	Severe: wetness.	Moderate: wetness, slope.	Fair: too clayey, slope, wetness.
65D*:					
Smithdale	Moderate: slope.	Severe: seepage, slope.	Severe: seepage.	Severe: seepage.	Fair: too clayey, slope.
Providence	Severe: slope, wetness, percs slowly.	Severe: slope.	Severe: wetness.	Moderate: wetness, slope.	Fair: too clayey, slope, wetness.

See footnote at end of table.

TABLE 14.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
5B*: Providence	Severe: wetness, percs slowly.	Moderate: slope.	Severe: wetness.	Moderate: wetness.	Fair: too clayey, wetness.
Tippah	Severe: wetness, percs slowly.	Severe: wetness.	Severe: too clayey.	Moderate: wetness.	Poor: too clayey, hard to pack.
7B*: Kipling	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness, too clayey.	Moderate: wetness.	Poor: too clayey, hard to pack.
Falkner	Severe: wetness, percs slowly.	Moderate: slope.	Severe: wetness, too clayey.	Moderate: wetness.	Poor: too clayey, hard to pack.
8D2 Smithdale	Moderate: slope.	Severe: seepage, slope.	Severe: seepage.	Severe: seepage.	Fair: too clayey, slope.
9F*: Maben	Severe: percs slowly, slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Smithdale	Severe: slope.	Severe: seepage, slope.	Severe: seepage, slope.	Severe: seepage, slope.	Poor: slope.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 15.--CONSTRUCTION MATERIALS

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "good," "fair," and other terms. Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation]

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
2*:				
Cascilla	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Good.
Arkabutla	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Good.
3	Fair:	Improbable:	Improbable:	Good.
Oaklimeter	wetness.	excess fines.	excess fines.	
5	Fair:	Improbable:	Improbable:	Good.
Gillsburg	low strength, thin layer, wetness.	excess fines.	excess fines.	
6*:				
Oaklimeter	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Good.
Gillsburg	Fair: low strength, thin layer, wetness.	Improbable: excess fines.	Improbable: excess fines.	Good.
7	Fair:	Improbable:	Improbable:	Good.
Kirkville	wetness.	excess fines.	excess fines.	
8	Poor:	Improbable:	Improbable:	Fair:
Urbo	low strength.	excess fines.	excess fines.	too clayey.
9*:				
Urbo	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
Arkabutla	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Good.
12A	Good	Probable	Improbable:	Fair:
Cahaba			excess fines.	small stones.
17*:				
Tippo	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Good.
Urban land.				
21A	Fair:	Improbable:	Improbable:	Good.
Leverett	low strength, wetness.	excess fines.	excess fines.	
22A	Fair:	Improbable:	Improbable:	Good.
Tippo	wetness.	excess fines.	excess fines.	
23	Poor:	Improbable:	Improbable:	Poor:
Guyton	wetness.	excess fines.	excess fines.	wetness.

See footnote at end of table.

	Topsoil
	Good.
	Fair: thin layer.
	Fair: thin layer, slope.
	Poor: thin layer.
	Good.
	Good.
	Good.
	Fair: slope.
	Good.
	Good.
	Good.
	Fair: thin layer.

·CONSTRUCTION MATERIALS--Continued

Sand	Gravel	Topsoil
probable: excess fines.	Improbable: excess fines.	Poor: thin layer.
probable: excess fines.	Improbable: excess fines.	Poor: thin layer.
probable: excess fines.	Improbable: excess fines.	Poor: slope.
probable: excess fines.	Improbable: excess fines.	Fair: slope.
probable: excess fines.	Improbable: excess fines.	Poor: thin layer, slope.
probable: excess fines.	Improbable: excess fines.	Poor: slope.
probable: excess fines.	Improbable: excess fines.	Fair: slope.
probable: excess fines.	Improbable: excess fines.	Fair: small stones, slope.
probable: excess fines.	Improbable: excess fines.	Fair: slope.
probable: excess fines.	Improbable: excess fines.	Good.
probable: excess fines.	Improbable: excess fines.	Fair: thin layer.
probable: excess fines.	Improbable: excess fines.	Poor: thin layer.
probable: excess fines.	Improbable: excess fines.	Fair: thin layer.
probable: excess fines.	Improbable: excess fines.	Fair: small stones, slope.

TABLE 15.--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
70F*:				
Maben	Fair: low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, slope.
Smithdale	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 16.--WATER MANAGEMENT

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not evaluated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation]

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
2*: Cascilla	Moderate: seepage.	Severe: piping.	Severe: no water.	Deep to water	Erodes easily, flooding.	Erodes easily	Erodes easily.
Arkabutla	Moderate: seepage.	Severe: wetness.	Moderate: slow refill.	Flooding	Wetness, erodes easily, flooding.	Erodes easily, wetness.	Erodes easily.
3--- Oaklimeter	Moderate: seepage.	Severe: piping, wetness.	Moderate: slow refill.	Flooding	Wetness, erodes easily, flooding.	Erodes easily, wetness.	Erodes easily.
5--- Gillsburg	Moderate: seepage.	Severe: piping, wetness.	Severe: slow refill.	Flooding	Wetness, erodes easily, flooding.	Erodes easily, wetness.	Wetness, erodes easily.
6*: Oaklimeter	Moderate: seepage.	Severe: piping, wetness.	Moderate: slow refill.	Flooding	Wetness, erodes easily, flooding.	Erodes easily, wetness.	Erodes easily.
Gillsburg	Moderate: seepage.	Severe: piping, wetness.	Severe: slow refill.	Flooding	Wetness, erodes easily, flooding.	Erodes easily, wetness.	Wetness, erodes easily.
7--- Kirkville	Moderate: seepage.	Severe: piping, wetness.	Moderate: slow refill.	Flooding	Wetness, flooding.	Wetness	Favorable.
8--- Urbo	Slight	Severe: wetness.	Severe: slow refill.	Percs slowly, flooding.	Wetness, percs slowly, erodes easily.	Erodes easily, wetness, percs slowly.	Wetness, erodes easily, percs slowly.

See footnote at end of table.

Tippo---------- Urban land.	Moderate: seepage.	Severe: piping.	Severe: no water.	Favorable------	Wetness, erodes easily.	Erodes easily, wetness.	Erodes easily.
21A---------- Leverett	Moderate: seepage.	Severe: piping.	Severe: no water.	Favorable------	Wetness, erodes easily.	Erodes easily, wetness.	Erodes easily.
22A---------- Tippo	Moderate: seepage.	Severe: piping.	Severe: no water.	Flooding-------	Wetness, erodes easily, flooding.	Erodes easily, wetness.	Erodes easily.
23---------- Guyton	Moderate: seepage.	Severe: piping, wetness.	Severe: no water.	Percs slowly, flooding.	Wetness, percs slowly, erodes easily.	Erodes easily, wetness, percs slowly.	Wetness, erodes easily, percs slowly.
25A---------- Quitman	Slight---------	Moderate: piping, wetness.	Severe: no water.	Favorable------	Wetness--------	Wetness--------	Favorable.
25B---------- Quitman	Moderate: slope.	Moderate: piping, wetness.	Severe: no water.	Slope----------	Wetness--------	Wetness--------	Favorable.

See footnote at end of table.

TABLE 16.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
35B2, 35C2-------- Tippah	Slight---------	Moderate: hard to pack, wetness.	Severe: no water.	Percs slowly, slope.	Wetness, percs slowly, slope.	Erodes easily, wetness.	Erodes easily, percs slowly.
35D2---------- Tippah	Slight---------	Moderate: hard to pack, wetness.	Severe: no water.	Percs slowly, slope.	Wetness, percs slowly, slope.	Slope, erodes easily, wetness.	Slope, erodes easily, percs slowly.
36B*: Kipling----------	Slight---------	Severe: hard to pack.	Severe: no water.	Percs slowly, slope.	Wetness, percs slowly, slope.	Wetness, percs slowly.	Percs slowly.
Urban land.							
38*: Pits.							
Udorthents.							
41B2, 41C2-------- Providence	Moderate: seepage, slope.	Moderate: thin layer, piping, wetness.	Severe: no water.	Slope----------	Wetness, rooting depth, slope.	Erodes easily, wetness.	Erodes easily, rooting depth.
42B*: Providence--------	Moderate: seepage, slope.	Moderate: thin layer, piping, wetness.	Severe: no water.	Slope----------	Wetness, rooting depth, slope.	Erodes easily, wetness.	Erodes easily, rooting depth.
Urban land.							
48C2---------- Ora	Moderate: seepage.	Moderate: piping, wetness.	Severe: no water.	Slope----------	Wetness, droughty, rooting depth.	Erodes easily, wetness.	Erodes easily, droughty.
48D2---------- Ora	Moderate: seepage.	Moderate: piping, wetness.	Severe: no water.	Slope----------	Wetness, droughty, rooting depth.	Slope, erodes easily, wetness.	Slope, erodes easily, droughty.

See footnote at end of table.

						wetness.	
56B---------- Pelahatchie	Moderate: slope.	Severe: hard to pack.	Severe: no water.	Percs slowly, slope.	Wetness, percs slowly, slope.	Erodes easily, percs slowly, wetness.	Erodes easily, percs slowly.
62F*: Smithdale---------	Severe: seepage, slope.	Severe: piping.	Severe: no water.	Deep to water	Slope----------	Slope----------	Slope.

See footnote at end of table.

TABLE 16.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
62F*:							
Providence	Severe: slope.	Moderate: thin layer, piping, wetness.	Severe: no water.	Slope	Wetness, rooting depth, slope.	Slope, erodes easily, wetness.	Slope, erodes easily, rooting depth.
Kisatchie	Severe: slope.	Severe: thin layer.	Severe: no water.	Deep to water	Percs slowly, depth to rock, slope.	Slope, depth to rock, erodes easily.	Slope, erodes easily, depth to rock.
64F*, 65D*:							
Smithdale	Severe: seepage, slope.	Severe: piping.	Severe: no water.	Deep to water	Slope	Slope	Slope.
Providence	Severe: slope.	Moderate: thin layer, piping, wetness.	Severe: no water.	Slope	Wetness, rooting depth, slope.	Slope, erodes easily, wetness.	Slope, erodes easily, rooting depth.
66B*:							
Providence	Moderate: seepage, slope.	Moderate: thin layer, piping, wetness.	Severe: no water.	Slope	Wetness, rooting depth, slope.	Erodes easily, wetness.	Erodes easily, rooting depth.
Tippah	Slight	Moderate: hard to pack, wetness.	Severe: no water.	Percs slowly, slope.	Wetness, percs slowly, slope.	Erodes easily, wetness.	Erodes easily, percs slowly.
67B*:							
Kipling	Slight	Severe: hard to pack.	Severe: no water.	Percs slowly, slope.	Wetness, percs slowly, slope.	Wetness, percs slowly.	Percs slowly.
Falkner	Moderate: slope.	Severe: hard to pack.	Severe: no water.	Percs slowly, slope.	Wetness, percs slowly, slope.	Erodes easily, wetness, percs slowly.	Erodes easily, percs slowly.

See footnote at end of table.

					erodes easily.	erodes easily.	erodes easily.
Smithdale---------	Severe: seepage, slope.	Severe: piping.	Severe: no water.	Deep to water	Slope----------	Slope----------	Slope.

* See description of the map unit for composition and behavior characteristics of the map unit.

7.--ENGINEERING INDEX PROPERTIES

e than. Absence of an entry indicates that data were not
ed classifications and USDA textures in addition to those
sifications and textures are shown]

Classification		Percentage passing sieve number--				Liquid limit	Plasticity index
Unified	AASHTO	4	10	40	200		
						Pct	
ML, CL-ML, CL	A-4, A-6	100	100	95-100	75-95	20-38	3-15
CL, CL-ML	A-4, A-6	100	100	95-100	75-100	20-39	5-15
SM, ML, CL-ML, SM-SC	A-4	100	100	80-95	45-85	<30	NP-7
CL, CL-ML	A-4, A-6	100	100	85-100	60-95	25-35	7-15
CL	A-6, A-7	100	100	85-100	70-90	30-45	12-25
ML, CL, CL-ML	A-4	100	100	90-100	70-90	<30	NP-8
ML, CL, CL-ML	A-4	100	100	85-95	60-85	<30	NP-8
ML, CL, CL-ML	A-4	100	100	90-100	90-100	<30	NP-10
CL-ML, CL	A-4	100	100	100	95-100	20-28	5-10
CL-ML, CL	A-4, A-6	100	100	100	90-100	20-38	5-16
ML, CL, CL-ML	A-4	100	100	90-100	70-90	<30	NP-8
ML, CL, CL-ML	A-4	100	100	85-95	60-85	<30	NP-8
ML, CL, CL-ML	A-4	100	100	90-100	90-100	<30	NP-10
CL-ML, CL	A-4	100	100	100	95-100	20-28	5-10
CL-ML, CL	A-4, A-6	100	100	100	90-100	20-38	5-16
ML, SM, CL-ML, SM-SC	A-2, A-4	100	100	60-85	30-65	<20	NP-5
ML, SM, CL-ML, SM-SC	A-2, A-4	100	100	60-100	30-65	<20	NP-5
CL	A-6	100	100	95-100	95-100	30-40	15-25
CL, CH	A-7	100	100	95-100	80-98	44-62	20-36
CL	A-6	100	100	95-100	95-100	30-40	15-25
CL, CH	A-7	100	100	95-100	80-98	44-62	20-36

INDEX PROPERTIES--Continued

sification		Percentage passing sieve number--				Liquid limit	Plas-ticity index
l	AASHTO	4	10	40	200		
						Pct	
ML	A-4, A-6	100	100	85-100	60-95	25-35	7-15
	A-6, A-7	100	100	85-100	70-90	30-45	12-25
	A-4, A-2-4	95-100	95-100	65-90	30-45	---	NP
	A-4, A-6	90-100	80-100	75-90	40-75	22-35	8-15
SM	A-2-4	95-100	90-100	60-85	10-35	---	NP
ML	A-4	100	100	90-100	80-100	<25	NP-7
ML	A-4	100	100	100	90-100	<25	NP-7
	A-4, A-6	100	100	90-100	80-100	<30	NP-12
ML	A-4	100	100	100	90-100	<25	NP-7
	A-4, A-6	100	100	100	90-100	20-38	8-17
ML	A-4	100	100	90-100	80-100	<25	NP-7
ML	A-4	100	100	100	90-100	<25	NP-7
	A-4, A-6	100	100	90-100	80-100	<30	NP-12
ML	A-4	100	100	95-100	65-90	<27	NP-7
ML	A-6, A-4	100	100	94-100	75-95	22-40	6-18
	A-4, A-2	100	100	85-100	30-55	<20	NP-3
	A-4, A-6	100	100	90-100	40-70	20-35	4-15
	A-6, A-7	100	100	90-100	40-65	25-45	11-20
ML	A-4	100	100	90-100	70-90	20-30	4-10
	A-6, A-7	100	98-100	90-100	85-95	30-45	11-22
	A-7	100	99-100	80-100	60-95	50-65	25-40
ML,	A-4	100	100	90-100	70-90	<30	NP-10
	A-7, A-6	100	100	95-100	85-95	38-70	22-45
	A-7	100	100	90-100	75-95	48-80	26-50

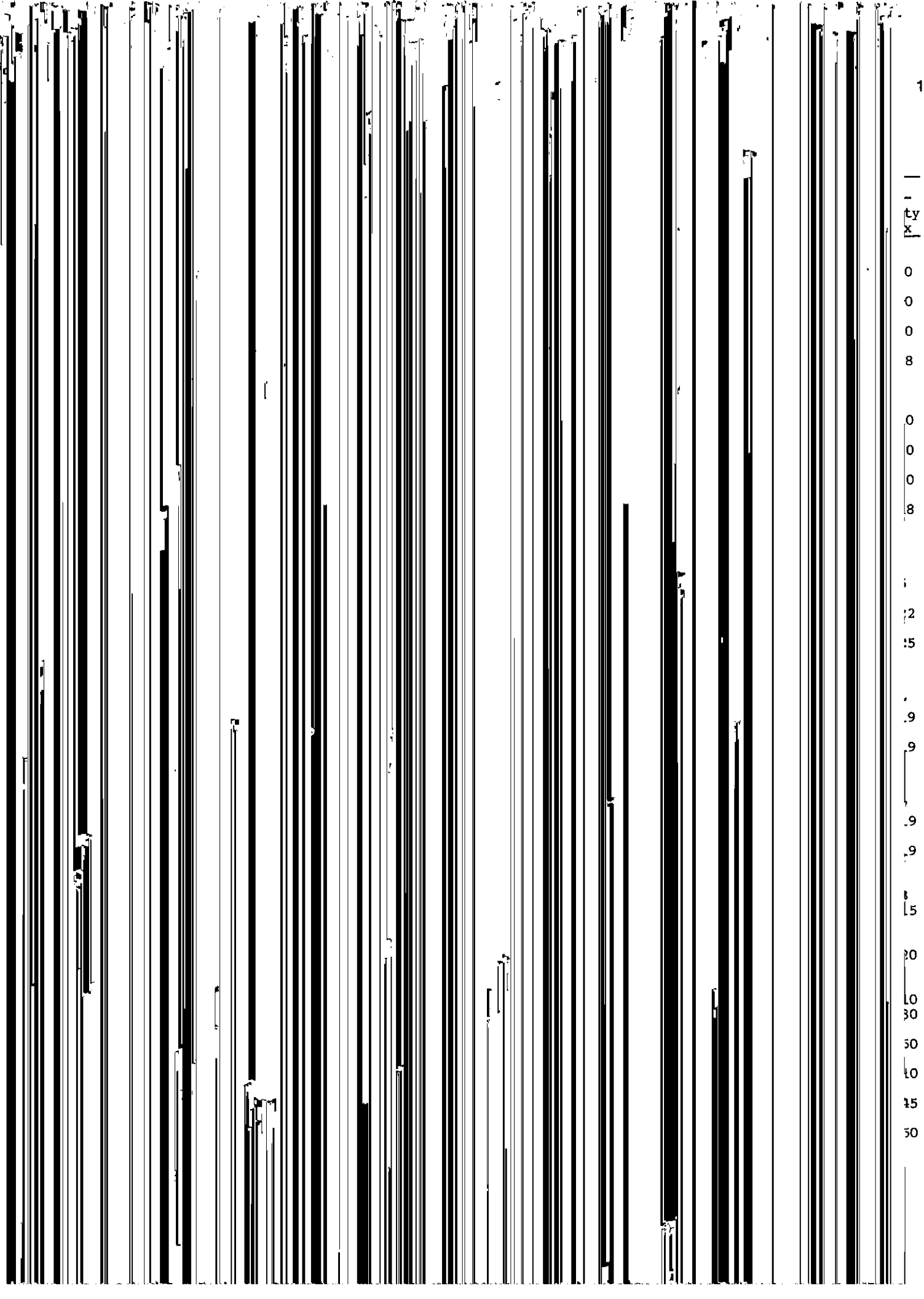
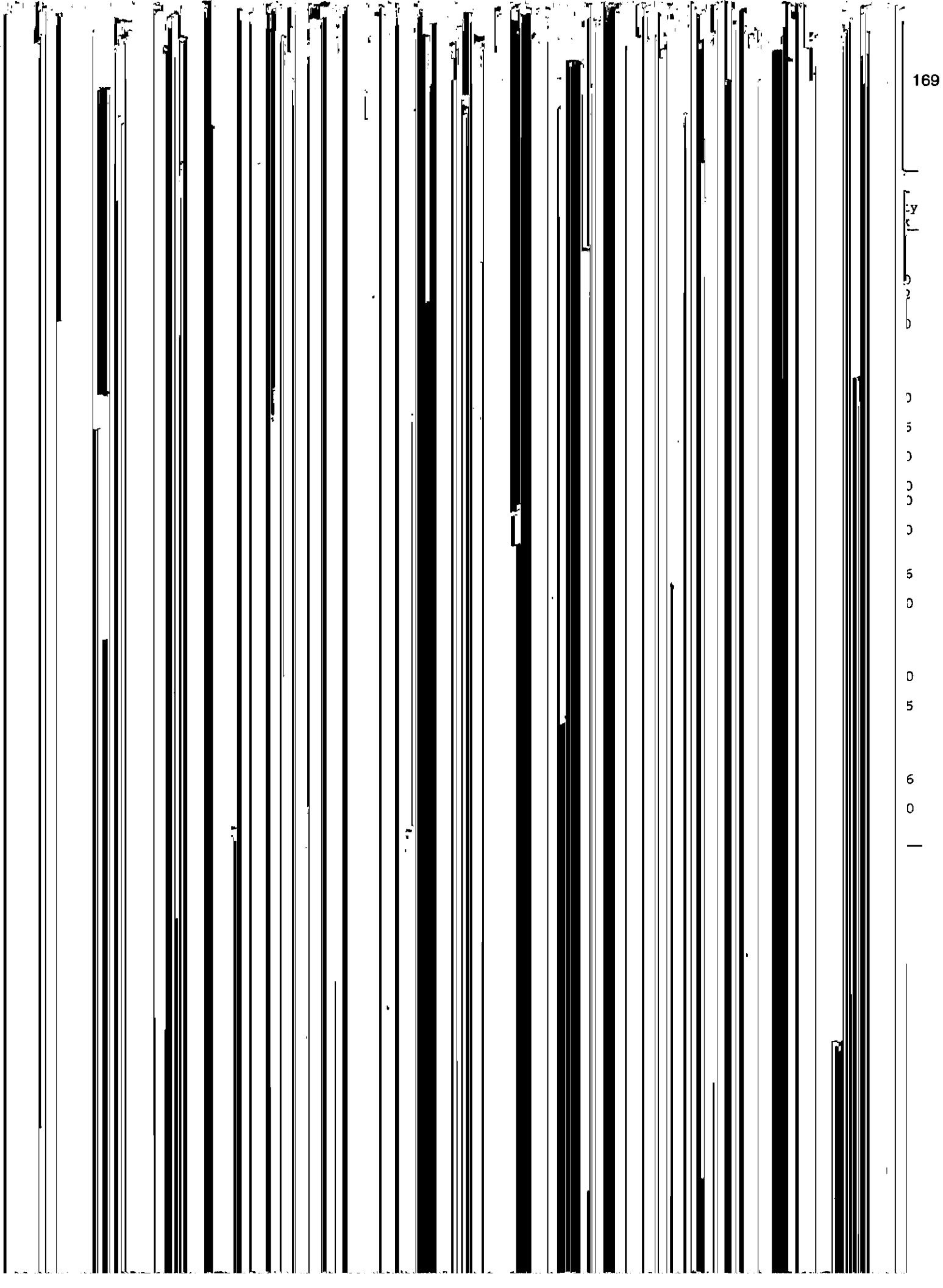


TABLE 17.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
56A, 56B--------- Pelahatchie	0-6	Silt loam---------	CL, CL-ML	A-4, A-6	100	100	95-100	90-100	10-30	5-15
	6-14	Silt loam, silty clay loam.	CL	A-4, A-6, A-7	100	100	95-100	90-100	20-42	7-20
	14-21	Silty clay loam, silty clay.	CH, CL	A-6, A-7	100	100	95-100	90-100	35-55	15-30
	21-43	Silty clay, silty clay loam.	CH, CL	A-7	100	100	90-100	90-100	42-70	25-45
	43-75	Silty clay, clay	CH	A-7	100	100	90-100	85-95	55-115	42-100
62F*: Smithdale-------	0-15	Fine sandy loam	SM, SM-SC	A-4, A-2	100	85-100	60-95	28-49	<20	NP-5
	15-41	Clay loam, sandy clay loam, loam.	SM-SC, SC, CL, CL-ML	A-6, A-4	100	85-100	80-96	45-75	23-38	7-16
	41-75	Loam, sandy loam	SM, ML, CL, SC	A-4	100	85-100	65-95	36-70	<30	NP-10
Providence------	0-5	Silt loam---------	ML, CL, CL-ML	A-4	100	100	100	85-100	<30	NP-10
	5-26	Silty clay loam, silt loam.	CL	A-7, A-6	100	100	95-100	85-100	30-45	11-20
	26-36	Silt loam, silty clay loam.	CL	A-6	100	100	90-100	70-90	25-40	11-20
	36-63	Loam, clay loam, sandy clay loam.	CL, SC	A-6, A-4	100	95-100	70-95	40-80	20-35	8-18
Kisatchie-------	0-11	Fine sandy loam	SM, SM-SC	A-4	100	100	70-85	40-55	<25	NP-4
	11-19	Silty clay, silty clay loam, clay loam.	CH, CL	A-7-6	100	100	90-100	85-95	45-65	22-36
	19-23	Silty clay, channery clay loam.	CH, CL	A-7-6	85-95	65-75	55-65	50-60	45-65	22-36
	23-40	Unweathered bedrock.	---	---	---	---	---	---	---	---
64F*, 65D*: Smithdale-------	0-15	Fine sandy loam	SM, SM-SC	A-4, A-2	100	85-100	60-95	28-49	<20	NP-5
	15-41	Clay loam, sandy clay loam, loam.	SM-SC, SC, CL, CL-ML	A-6, A-4	100	85-100	80-96	45-75	23-38	7-16
	41-75	Loam, sandy loam	SM, ML, CL, SC	A-4	100	85-100	65-95	36-70	<30	NP-10
Providence------	0-5	Silt loam---------	ML, CL, CL-ML	A-4	100	100	100	85-100	<30	NP-10
	5-26	Silty clay loam, silt loam.	CL	A-7, A-6	100	100	95-100	85-100	30-45	11-20
	26-36	Silt loam, silty clay loam.	CL	A-6	100	100	90-100	70-90	25-40	11-20
	36-63	Loam, clay loam, sandy clay loam.	CL, SC	A-6, A-4	100	95-100	70-95	40-80	20-35	8-18
66B*: Providence------	0-5	Silt loam---------	ML, CL, CL-ML	A-4	100	100	100	85-100	<30	NP-10
	5-26	Silty clay loam, silt loam.	CL	A-7, A-6	100	100	95-100	85-100	30-45	11-20
	26-36	Silt loam, silty clay loam.	CL	A-6	100	100	90-100	70-90	25-40	11-20
	36-63	Loam, clay loam, sandy clay loam.	CL, SC	A-6, A-4	100	95-100	70-95	40-80	20-35	8-18

See footnote at end of table.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TIES OF THE SOILS

Erosion factors--T" apply to the entire face layer. Absence of an entry indicates

e	Soil reaction	Shrink-swell potential	Erosion factors		Organic matter
			K	T	
	pH				Pct
2	4.5-5.5	Low----------	0.43	5	1-3
0	4.5-5.5	Low----------	0.43		
0	4.5-5.5	Low----------	0.43		
2	4.5-5.5	Low----------	0.43	5	1-3
1	4.5-5.5	Low----------	0.32		
2	4.5-5.5	Low----------	0.43	5	.5-2
0	4.5-5.5	Low----------	0.43		
0	4.5-5.5	Low----------	0.43		
2	4.5-5.5	Low----------	0.43	5	1-3
8	4.5-5.5	Low----------	0.43		
2	4.5-5.5	Low----------	0.43	5	.5-2
0	4.5-5.5	Low----------	0.43		
0	4.5-5.5	Low----------	0.43		
2	4.5-5.5	Low----------	0.43	5	1-3
.8	4.5-5.5	Low----------	0.43		
.5	4.5-5.5	Low----------	0.28	5	.5-2
.5	4.5-5.5	Low----------	0.28		
1	4.5-5.5	Low----------	0.49	5	1-3
0	4.5-5.5	Moderate-----	0.28		
1	4.5-5.5	Low----------	0.49	5	1-3
0	4.5-5.5	Moderate-----	0.28		
2	4.5-5.5	Low----------	0.43	5	1-3
1	4.5-5.5	Low----------	0.32		
.4	4.5-6.0	Low----------	0.24	5	.5-2
.5	4.5-6.0	Low----------	0.28		
.0	4.5-6.0	Low----------	0.24		
2	4.5-6.0	Low----------	0.43	3	.5-1
2	4.5-6.0	Low----------	0.43		
2	4.5-6.0	Low----------	0.43		
3	4.5-6.0	Low----------	0.37	4	.5-1
0	4.5-6.0	Low----------	0.37		
2	4.5-6.0	Low----------	0.43	3	.5-1
2	4.5-6.0	Low----------	0.43		
2	4.5-6.0	Low----------	0.43		

RTIES OF THE SOILS--Continued

vailable water apacity	Soil reaction	Shrink-swell potential	Erosion factors		Organic matter
			K	T	
In/in	pH				Pct
).20-0.23	3.6-6.0	Low----------	0.43	5	<2
).15-0.22	3.6-6.0	Low----------	0.37		
).13-0.16	4.5-5.5	Low----------	0.28	5	1-3
).15-0.20	4.5-5.5	Low----------	0.28		
).10-0.18	4.5-5.5	Low----------	0.28		
).20-0.22	4.5-6.0	Low----------	0.43	5	.5-2
).19-0.21	4.5-6.0	Moderate-----	0.43		
).16-0.18	4.5-6.0	High---------	0.24		
).20-0.22	3.6-6.0	Low----------	0.32	5	.5-2
).20-0.22	3.6-8.4	High---------	0.32		
).18-0.20	5.1-8.4	Very high----	0.32		
).20-0.22	4.5-6.0	Low----------	0.49	3	.5-3
).20-0.22	4.5-6.0	Low----------	0.43		
).08-0.10	4.5-6.0	Moderate-----	0.32		
).08-0.10	4.5-6.0	Low----------	0.32		
0.20-0.22	4.5-6.0	Low----------	0.49	3	.5-3
0.20-0.22	4.5-6.0	Low----------	0.43		
0.08-0.10	4.5-6.0	Moderate-----	0.32		
0.08-0.10	4.5-6.0	Low----------	0.32		
0.10-0.13	3.6-5.5	Low----------	0.28	3	1-3
0.12-0.18	3.6-5.5	Low----------	0.37		
0.05-0.10	3.6-5.5	Low----------	0.32		
0.16-0.20	3.6-5.5	Low----------	0.37	3	.5-3
0.13-0.20	3.6-5.5	Low----------	0.28		
0.05-0.10	3.6-5.5	Low----------	0.24		
0.16-0.20	3.6-5.5	Low----------	0.37	3	.5-3
0.13-0.20	3.6-5.5	Low----------	0.28		
0.05-0.10	3.6-5.5	Low----------	0.24		
0.13-0.16	4.5-5.5	Low----------	0.28	5	1-3
0.15-0.20	4.5-5.5	Low----------	0.28		
0.10-0.18	4.5-5.5	Low----------	0.28		
0.20-0.22	4.5-6.0	Low----------	0.49	4	.5-3
0.19-0.22	4.5-6.0	Moderate-----	0.43		
0.16-0.18	4.5-6.5	High---------	0.24		
0.20-0.22	3.6-6.0	Low----------	0.32	5	.5-2
0.20-0.22	3.6-8.4	High---------	0.32		
0.18-0.20	5.1-8.4	Very high----	0.32		

ES OF THE SOILS--Continued

lable ter city	Soil reaction	Shrink-swell potential	Erosion factors		Organic matter
			K	T	
/in	pH				Pct
-0.22	4.5-6.0	Moderate-----	0.43	5	2-3
-0.22	4.5-6.0	Moderate-----	0.43		
-0.18	4.5-6.5	Moderate-----	0.32		
-0.18	5.1-7.8	High----------	0.24		
-0.15	7.4-8.4	Very high----	0.24		
-0.16	4.5-5.5	Low----------	0.28	5	.5-2
-0.17	4.5-5.5	Low----------	0.24		
-0.16	4.5-5.5	Low----------	0.28		
-0.22	4.5-6.0	Low----------	0.49	3	.5-3
-0.22	4.5-6.0	Low----------	0.43		
-0.10	4.5-6.0	Moderate-----	0.32		
-0.10	4.5-6.0	Low----------	0.32		
-0.15	4.5-5.5	Low----------	0.32	3	.5-2
-0.18	3.6-5.0	High----------	0.32		
-0.15	3.6-5.0	High----------	0.32		
--	---	----------	----		
-0.16	4.5-5.5	Low----------	0.28	5	.5-2
-0.17	4.5-5.5	Low----------	0.24		
-0.16	4.5-5.5	Low----------	0.28		
-0.22	4.5-6.0	Low----------	0.49	3	.5-3
-0.22	4.5-6.0	Low----------	0.43		
-0.10	4.5-6.0	Moderate-----	0.32		
-0.10	4.5-6.0	Low----------	0.32		
-0.22	4.5-6.0	Low----------	0.49	3	.5-3
-0.22	4.5-6.0	Low----------	0.43		
-0.10	4.5-6.0	Moderate-----	0.32		
-0.10	4.5-6.0	Low----------	0.32		
-0.22	4.5-6.0	Low----------	0.43	5	.5-2
-0.21	4.5-6.0	Moderate-----	0.43		
-0.18	4.5-6.0	High----------	0.24		
-0.22	3.6-6.0	Low----------	0.32	5	.5-2
-0.22	3.6-8.4	High----------	0.32		
-0.20	5.1-8.4	Very high----	0.32		
-0.22	4.5-6.0	Low----------	0.49	4	.5-3
-0.22	4.5-6.0	Moderate-----	0.43		
-0.18	4.5-6.5	High----------	0.24		
-0.16	4.5-5.5	Low----------	0.28	5	.5-2
-0.17	4.5-5.5	Low----------	0.24		
-0.16	4.5-5.5	Low----------	0.28		
-0.16	5.6-6.5	Low----------	0.28	3	.5-1
-0.18	4.5-6.0	High----------	0.28		
-0.18	4.5-6.0	Moderate-----	0.28		

TABLE 18.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

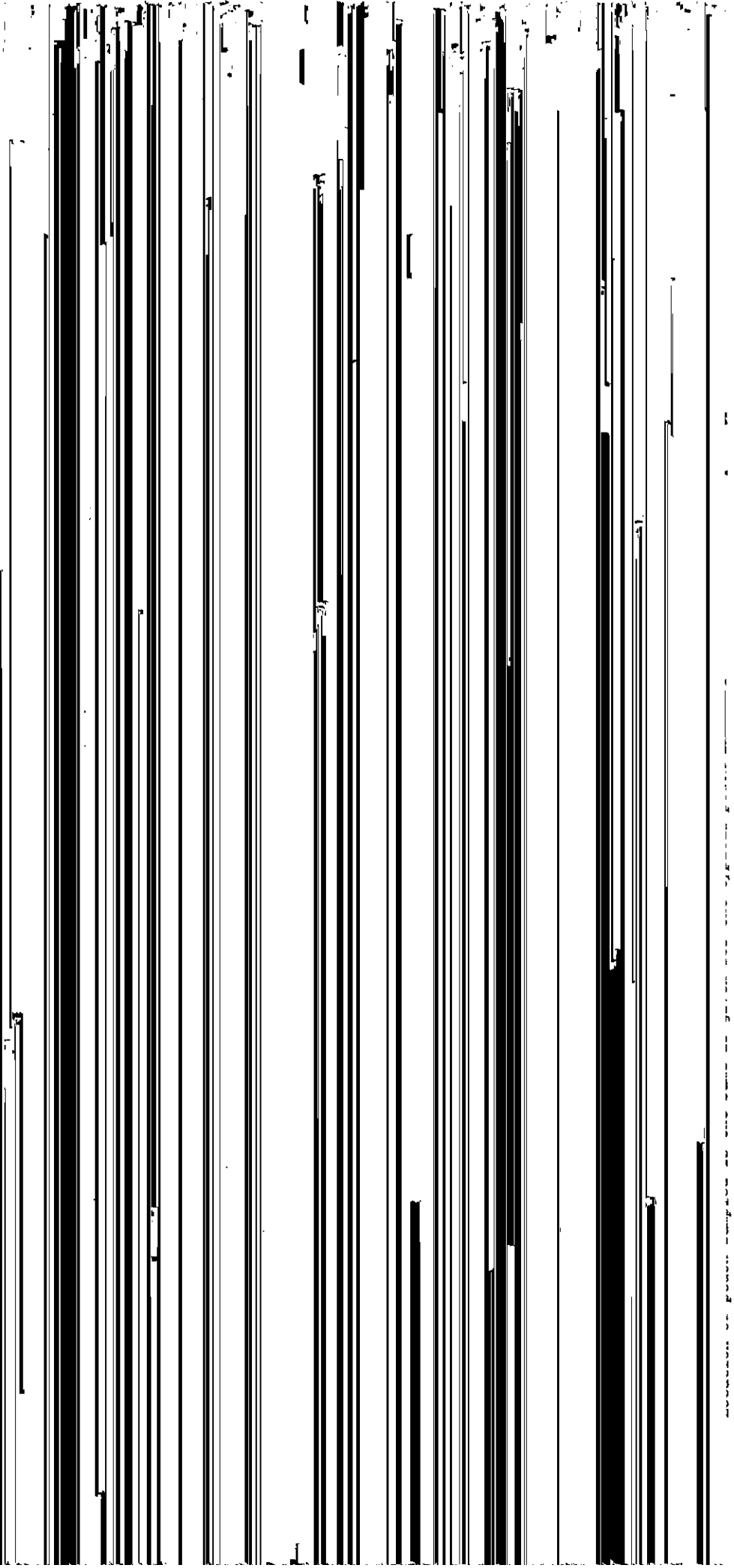
Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Organic matter
								K	T	
	In	Pct	G/cc	In/hr	In/in	pH				Pct
70F*:										
Smithdale-------	0-15	2-15	1.40-1.50	2.0-6.0	0.14-0.16	4.5-5.5	Low----------	0.28	5	.5-2
	15-41	18-33	1.40-1.55	0.6-2.0	0.15-0.17	4.5-5.5	Low----------	0.24		
	41-75	12-27	1.40-1.55	2.0-6.0	0.14-0.16	4.5-5.5	Low----------	0.28		

* See description of the map unit for composition and behavior characteristics of the map unit.

inued

gh water table		Risk of corrosion	
Kind	Months	Uncoated steel	Concrete
Perched	Jan-Mar	High-----	Moderate.
Perched	Dec-Apr	High-----	High.
Perched	Jan-Mar	High-----	High.
Perched	Jan-Mar	Moderate	Moderate.
Perched	Jan-Mar	Moderate	Moderate.
Perched	Feb-Apr	Moderate	High.
Perched	Jan-Mar	Moderate	High.
Perched	Jan-Mar	Moderate	High.
Perched	Jan-Mar	High-----	Moderate.
Perched	Jan-Mar	High-----	Moderate.
Perched	Jan-Mar	High-----	High.
---	---	High-----	Moderate.
---	---	Low------	Moderate.
Perched	Jan-Mar	Moderate	Moderate.
---	---	High-----	High.
---	---	Low------	Moderate.
Perched	Jan-Mar	Moderate	Moderate.
Perched	Jan-Mar	Moderate	Moderate.
Perched	Dec-Apr	High-----	High.

Corrosion Concrete
High.
Moderate.
Moderate.
Moderate.
Moderate.



SSIFICATION OF THE SOILS

Family or higher taxonomic class
id, thermic Aeric Fluvaquents
, thermic Typic Hapludults
ermic Fluventic Dystrochrepts
, thermic Aquic Paleudalfs
acid, thermic Aeric Fluvaquents
, thermic Typic Glossaqualfs
c, thermic Vertic Hapludalfs
us, thermic Fluvaquentic Dystrochrepts
c, thermic Typic Hapludalfs
thermic Haplic Glossudalfs
Ultic Hapludalfs
thermic Fluvaquentic Dystrochrepts
, thermic Typic Fragiudults
ermic Aquic Hapludalfs
ermic Typic Fragiudalfs
, thermic Aquic Paleudults
, thermic Typic Fragiudults
, thermic Typic Hapludults
ermic Aquic Paleudalfs
thermic Aquic Glossudalfs
ermic Aeric Haplaquepts

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